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ABSTRACT

Telecommunications facilities, programing, plans, and communication needs of the independent institutions of higher education in Indiana were surveyed. Data were collected from questionnaires, on-site visits, and workshop discussions to evaluate telecommunication facilities. Recommendations were developed which outline steps to be taken to enable independent higher education institutions to participate in the Indiana Higher Education Telecommunication System (IHETS) and other measures which could facilitate sharing of telecommunication resources among institutions of higher education in Indiana. The proposal for this project, forms used in data collection, the data, and supplements to the recommendations are appended. (CH)

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A STUDY OF TELECOMMUNICATIONS IN INDIANA INDEPENDENT HIGHER EDUCATION

Sponsored by:

Associated Colleges of Indiana

Independent Colleges and Universities of Indiana, Inc.

Indiana Higher Education Telecommunication System

Funded by:

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W. Neal Robison
Project Coordinator

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FOREWORD

The 1967 legislation which created the Indiana Higher Education Telecommunication System (IHETS) recognized the advantages of "sharing educational resources between public and private institutions of higher education in Indiana" for the most effective use of the state's higher educational resources. To this end, design of the IHETS systems anticipated the possibility of extension of service to the independent institutions. In fact, in the late 1960's and early 1970's, the State Universities Telecommunications Coordinating Council (SUTCC) and its Executive Committee prepared a set of guidelines whereby the independent institutions could be connected to the various IHETS networks... at the expense of the institutions. Because the independent colleges and universities were not members of IHETS, the System could not provide them services as it did for its members. A number of the private colleges were interested in such interconnection, but the expense involved in each case proved prohibitive. In other words, the sharing mentioned in the IHETS enabling legislation was simply not economically feasible.

In March of 1973, however, the Indiana General Assemby enacted H.B. 1337, which added a representative of the Board of Directors of the Independent Colleges and Universities of Indiana, Inc. (ICUI) to the Board of Directors of IHETS, giving the ICUI equivalent status with the Boards of Trustees of the other member institutions--Ball State University, Indiana State University, Indiana University, the Indiana Vocational Technical College, Purdue University, and Vincennes University. An important difference to note, however, is that ICUI is itself composed of thirty-two member institutions,* each independent of the others, each with its distinct identity and separate faculty, administration, and campus. Unlike the public universities with their regional campus systems, the ICUI Board of Directors could not be expected to monitor the telecommunications activities of each institution or the particular educational facilities and services available for sharing and interinstitutional cooperation.

Consequently, in January of 1974 the Lilly Endowment, Inc. granted funds to ICUI for a study to accumulate both individual and collective data about the resources and telecommunications status of the independent colleges and universities of Indiana. The Associated Colleges of Indiana acted as grant recipient, and funds were relayed to IHETS to conduct the study on behalf of ICUI. The goals stated in the proposal were to "(1) Survey the telecommunications equipment and facilities of independent institutions, (2) Explore their present and potential use with special attention to cooperative possibilities, (3) Develop a prioritized list of specific recommendations for extending service to independent institutions including cost projections for each." (A copy of the complete proposal is included as APPENDIX A-1).

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*Two colleges in addition to these thirty-two were included in the study; see APPENDIX A-2.

As soon as funding procedures were completed and the staff assembled, the tentative timetable and goals were re-examined. Workshops were rescheduled for the fall semester to coincide with the availability of greater numbers of faculty members. Consequently, by the time workshops were held, the study had produced enough developments that time no longer allowed a detailed orientation to telecommunications. In addition, the ICUI Board of Directors recently indicated that its members prefer to assign priorities after (rather than before) presentation of the report. Aside from these two changes, however, the study closely adhered to the goals originally outlined.

All of the thirty-four colleges and universities involved in this study have been most cooperative in providing information about their facilities and activities. We greatly appreciated the hospitality shown to the study staff during the campus visits and workshops.

By contributing their highly-valued expertise, Dr. Robert E. Martin, President of ICUI, and Dr. Jane G. Richards, Executive Director of IHETS, have provided much assistance and knowledge to this study. During the campus visits the Project Coordinator was ably assisted by David M. Wilson, who served as technical adviser to the study. Gratitude should also be expressed to Randall G. Bretz, IHETS Media Utilization Coordinator, for his help during the regional workshops; Victor F. Clark, formerly Director of Administrative Services for IHETS and presently Executive Vice-President of Indiana Forum, Inc., for his direction during the early stages of the study; and James R. Potter, Director of Systems Operation and Development, IHETS, for much of the technical assistance needed for the study. During the course of the whole study, Susan B. Rutledge has served as Administrative Assistant. The completion of this report and the success of the campus visits and regional workshops can largely be credited to Susan Rutledge--a woman of intelligent presence and tireless industry.

W. Neal Robison
Project Coordinator

February, 1975

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CHAPTER I

INTRODUCTION

The combination of the rapid development of communications technology and the "information explosion" demands at least an awareness on the part of educators of the instructional possibilities of telecommunications. Radio and television, of course, have been used as educational tools for several decades; the telephone is an old friend whose educational applications are only beginning to be widely realized; and although computer use may not be necessary on every campus, its implications can not be ignored. Other developing technologies--ultra-microfiche, cable technology, long-range facsimile transmission, micro-wave technology, and communications satellites are only a few--should likewise concern education. These media not only expand curricula but also increase the options for delivering information.

Given the litany of economic problems currently besetting higher education in general and independent higher education in particular, financial exigency might seem to preclude further exploration of communications technology: hardware is often expensive, and it must be utilized in order to justify that expense. These very economic woes, however, joined with a number of swelling social concerns, make telecommunications an increasingly attractive resource for higher education. Educational technology can increase the number of student options for receiving instruction as well as the opportunities for independent study. The growing emphases on shorter periods of time spent in formal education, on greater numbers of short-term programs, and on reaching out into surrounding communities for continuing adult education and community service--all point to the utilization of telecommunications as a means of achieving these ends. Further, interinstitutional cooperation in telecommunications enables participating institutions to achieve cost-savings and to carry out projects which individually they might not be able to afford. The rapid development of IHETS illustrates how telecommunications can both be the focus of such cooperation and at the same time facilitate cooperation in other areas of higher education.

The goals of this report, then, are: (1) to present the data accumulated about telecommunications hardware, facilities, programming, plans, and needs of the independent sector of higher education in Indiana, (2) to offer recommendations concerning steps to be taken on behalf of the independent institutions to enable them to participate fully in the cooperative benefits of the IHETS consortium, and (3) additionally, to present recommendations concerning other measures possible to facilitiate the sharing of telecommunications resources among independent institutions and between independent and public higher education in Indiana.

The IHETS/ICUI study staff has employed three types of research methods--questionnaires, on-site visits and interviews, and workshop discussions--to acquire the data needed to evaluate telecommunications

in the independent sector and to make recommendations accordingly. (Copies of the forms used in this research are included in APPENDIX B.) A preliminary questionnaire was mailed February 28, 1974, to the president of each institution included in the study[1] in order to identify those in charge of or associated with academic and administrative uses of the computer, on-campus radio and television systems, broadcast education, educational technology, and the campus telephone systems. An additional questionnaire was completed by twenty-seven institutions in early November, supplying the study with more recent information regarding programming and software available on each campus.

The personnel identified through the preliminary questionnaire became a resource pool of people to be contacted during the on-site visits conducted from April through early August. The Project Coordinator and Technical Adviser visited each of the thirty-four campuses to survey facilities and discuss courseware, cooperative ventures, and felt needs. In addition, meetings with the president, vice-presidents, and/or academic dean were arranged whenever possible to gain a knowledge of broad institutional plans and goals. Through these visits and interviews, the bulk of the study data was collected.

The series of telecommunications workshops provided a means of revising data acquired earlier in the summer and served as a vehicle for the expression of priorities by a broader representation of the faculties than that segment contacted during the campus visits. The workshops also introduced IHETS to the participants, who in turn advised the IHETS staff of benefits they would like to receive from IHETS as well as contributions they would like to make to IHETS. Seven regional workshops were conducted by the IHETS and study staffs between October 8 and November 12, 1974.

As a result of these questionnaires, visits, and workshops, the study staff has accumulated a substantial body of data about telecommunications in Indiana independent higher education. Institutional data are presented individually in APPENDIX C-3; the collective picture is examined in the following chapter.

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[1]Thirty-four colleges and universities were included; for a list and explanations, see APPENDIX A-2.

CHAPTER II

TELECOMMUNICATIONS IN INDIANA

INDEPENDENT HIGHER EDUCATION

The data collected during the course of this study reveal an active participation in telecommunications at most of the thirty-four institutions surveyed. The telephone, of course, is in use at each institution; all but three colleges make some use of computer services; seventeen operate either broadcast or carrier-current[2] radio stations; and all but two have some television equipment. As is true nationwide in both private and public higher education, however, software development has rarely kept pace with hardware acquisition.

Computer

The colleges and universities surveyed showed a very marked difference in computer power, usage, and need. Nineteen institutions have computer centers or on-campus facilities of greatly varying size, twelve go to outside sources for their computer needs, and three report using no computers.

Campus Facilities and Use. The nineteen institutions with on-campus computer facilities report one or more centralized processing units ranging in size from the large IBM-370's at Evansville and Notre Dame to the smaller NCR-400 at Concordia Senior. Personnel at the five largest centers (Anderson, Evansville, Notre Dame, St. Mary's, and Valparaiso) all state that, despite heavy use of their systems, they could take on outside business if it did not tax their staffs and resources too severely. In fact, Evansville and Notre Dame already handle much of the computing work for the Study of Independent Higher Education in Indiana. The ample facility at St. Mary's is too new for active use to have developed either on campus or by outside users. All five of these institutions have experimented with computer-assisted instruction (CAI) on their own campuses. Two have also participated in nationwide CAI programs: Valparaiso utilizes a PLATO terminal, and Evansville has helped generate a Computerized Vocational Information System (CVIS) software package for use by other educational institutions.

Five other institutions (Indiana Central, Rose-Hulman, Saint Meinrad, Taylor, and Wabash) form a second category of medium-sized computer facilities (in the 32k memory range); for the most part, these centers adequately meet staff needs. Because of its many

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[2]This and other technical terms are defined in APPENDIX F.

academic programs involving computers, Rose-Hulman's center is probably one of the busiest among the ICUI members. On the other hand, St. Meinrad's computer is primarily an adjunct to its commercial publication and printing business, The Abbey Press. Another institution in this group, Taylor, deserves special mention for its cooperative spirit in hosting the first statewide computer conference for Indiana's independent colleges and universities. Held on May 4, 1974, the conference grew out of a survey by Dr. Howard Alexander of Earlham College examining computer facilties at the ICUI member institutions.

In a third category are nine institutions (Concordia Senior, DePauw, Earlham, Franklin, Goshen, Indiana Tech, Manchester, Saint Joseph's and Tri-State) with computer facilities in the 8k to 16k memory range. In most cases, these schools can accomplish their administrative and academic computing on campus. A number of the staff members at these centers, however, stated that their limited operating funds have inhibited desirable CAI developments.

Outside Services. Twelve colleges turn to outside sources to fill their computing needs. The Northern Indiana Financial Services Corporation (NIFSCO) of Marion handles administrative jobs for six of these institutions (Bethel, Goshen, Grace, Huntington, Manchester, and Marion). The others use computers at local banks, dairies, and pharmaceutical companies. These arrangements are usually acceptable, but long turn-around times (delays in sending and receiving the completed jobs) have been inconvenient, and costs are high. In all cases, the schools would make more frequent and extensive use of the outside computers if line charges in particular were less expensive.

No Computers. Ancilla, Holy Cross, and Oakland City do not use computers. Oakland City has been offered free computer time by the University of Evansville, but the college feels that its small size allows administrative work to be accomplished best in a traditional manner. The same belief was expressed at Ancilla and Holy Cross as well. It should be noted, however, that Oakland City felt it could profit from the use of a computer for academic functions, particularly for CAI programs.

Reported Needs. Computer needs among Indiana's independent institutions vary as markedly as the sizes and types of their computer hardware. At one end of the scale are five institutions with more computing power than they are now using. For all institutions with on-campus facilities there exist demonstrable needs for software, especially for CAI programs that are both instructionally effective and economically feasible. At the other end of the scale are over a dozen institutions which greatly need computing services for both academic and administrative purposes. Institutions wishing to share facilities need less expensive line charges for the connections.

Radio

Radio or audio delivery systems at these thirty-four colleges and universities fall into three natural groupings: the eleven institutions operating on-air broadcast stations, the nine operating carrier-current or closed-circuit radio stations, and the seventeen operating neither broadcast nor cable systems. (Goshen, Manchester, and Notre Dame operate both types of stations.)

Broadcast Stations. Butler, DePauw, Earlham, Evansville, Franklin, Goshen, Indiana Central, Manchester, Notre Dame, Valparaiso, and Wabash operate broadcast FM radio stations. The larger stations operate on a year-round basis; the others broadcast on a schedule dictated by the institutional academic calendar. In the majority of cases, the direc relationship between the station's on-air time and its signal strength is undoubtedly due to budget size.

The stations at Earlham, Franklin, Indiana Central and Valparaiso operate at ten watts of power on limited hours of broadcasting with coverage areas between three and twelve miles' radius from the transmitting site. This allows the station to offer signal reception to the local community only, and consequently most ten-watt stations are considering increases in power and coverage area. The other broadcast stations maintain from 115 watts (WGRE-DePauw) to 36,000 watts (WAJC-Butler) with signal coverage areas varying in radius from twenty to fifty or more miles. All eleven stations originate programming from on-campus studios.

Although ultimate responsibility for these stations goes to the licensee (usually the institutional board of trustees), the major decision-making responsibility is assigned to a faculty person or persons. Students usually operate the stations and may, in some cases, act in management capacities, but few stations employ salaried student staff members. More commonly, staff members either are given their duties as part of a class assignment or are chosen on an as-needed basis. This reliance on students for staffing is another reason that a number of stations operate on an academic-calendar format. Engineering services may be supplied by either a technically qualified student or by a faculty person with an electronics background, but all stations have such services available. At Franklin, the station's engineer and faculty adviser are the same person, an arrangement which makes some economy possible in a medium in which most stations report insufficient funds.

Although WNDY at Wabash reports the sale of commercial time as its main source of income, all others have budgets supplied from the institutions' general funds. These funds are spent primarily on equipment upkeep and maintenance, record and program purchases, and engineering support. There are usually some additional monies budgeted for the purchase of new equipment and such "usables" as blank audiotape and office supplies.

The stations program music during most of the broadcast day, with rock or "Top 40" the most frequently reported type of musical offering. Goshen's WGCS, however, broadcasts significant amounts of classical music. Two exceptions to this heavy programming of music are WAJC at Butler, which offers instructional and informational programming as the mainstay of its broadcast time, and WGRE at DePauw, which devotes a large portion of its time to news and community-information programming.

Seven stations have access to one or more of the news wire services; the others manage as they can for their news programs. A number of stations have occasionally broadcast campus religious services, convocations, and intercollegiate sporting events. Except for the sports events, however, these attempts have met with mixed success and are not usually a part of the regular broadcast schedule. Many stations would like to incorporate these events into regular programming, but other plans usually take higher priority. A few stations have tried to purchase outside-produced programming, but these efforts have seldom resulted in anything more than sporadic public-service programs and almost never in sustained informational or instructional programming. Cooperative program exchange has been virtually non-existent.

The faculty advisers interviewed universally sought budget increases which would enable them to cope with their attendant needs for more instructional and informational programming, programs that would hold value for the community as well as the campus population being served. More and better engineering services are another major requirement. More and better hardware and transmission equipment is needed. In addition, managers voiced a concern for reaching larger populations of potential students, cultivating the radio station as a public relations arm and a recruiting aid to the institution. All of these needs were expressed at each of the eleven institutions with broadcast radio stations.

Carrier-Current Stations. Three institutions (Goshen, Manchester, and Notre Dame) operate both broadcast and carrier-current stations, and six others (Fort Wayne Bible, Indiana Tech, Northwood, Rose-Hulman, St. Joseph's, and Tri-State) operate only carrier-current stations--closed-circuit radio delivery systems making use of on-campus wiring to carry their signals from building to building and receiver to receiver. The carrier-current AM signal does not ordinarily go out over the air, although Indiana Tech reports that the AM signal of its carrier-current station can be received several blocks away from campus.

These nine carrier-current stations are run in much the same manner as the broadcast stations. They are student-operated, and since they are closed-circuit, the student control is greater. At Manchester the carrier-current facility is a training studio for beginning students; after an internship at the carrier-current station, the student may advance to the broadcast station. With two exceptions, there is very little programming originality among these stations. The exceptions are WOWI at St. Joseph's and WGCS at Goshen, which originate audio programming on one channel of their local cable television systems. This excellent method of signal extension serves the institutions, the community, and business. Anderson expects to advance this concept in 1975 through an arrangement whereby the cable system will distribute the signal back to the campus into each dormitory and classroom building.

It should be noted that Fort Wayne Bible College, which presently operates a carrier-current station, has received permission from the Federal Communications Commission to begin construction of a 50,000-watt educational FM broadcast station. The station will have a range of approximately twenty-five miles' radius and should be on the air by the fall semester of 1975.

No Stations. The remaining institutions surveyed report no radio station facilities, although at least two (Calumet and Saint Meinrad) are considering plans for broadcast stations. There are other institutions which have, exclusive of transmitting facilities, most of the equipment (control board, turntables, and audio-tape recorders) necessary to operate a radio station. Taylor once had a radio station, but operations were suspended in 1972 because of dwindling funds. Indeed, lack of funds is the major concern of all radio station managers at the independent colleges and universities.

Telephone

With the cooperation of the telephone companies serving Indiana, the study staff was able to gather specific data about telephone equipment installed on thirty-two of the campuses; the other two institutions provided information from their own records about telephone systems and stations in use. In addition, many of the institutions volunteered information regarding long-distance toll expenses on a monthly or annual basis.

The thirty-four institutions are served by eight different telephone companies--General Telephone, Illinois Bell, Indiana Bell, Indiana Telephone, Perry-Spencer Rural Telephone Co-op, Princeton Telephone, Smithville Telephone, and United Telephone. Costs for long-distance toll calls vary from $300 per month for two of the institutions to almost $2000 per month for two others. Significantly, a large percentage of these monthly charges is for in-state calling.

Equipment. Twenty-six institutions have PBX telephone systems,[3] all controlled by operator switchboards. The systems range in size from 41 stations at Northwood to 419 at DePauw. A PBX system may have extensive trunks and lines, but many institutions are reaching the limits of the trunks and lines they have had installed. Franklin, for example, is presently equipped with 120 lines and ten trunks and uses 173 stations and nine of its trunks (a line may terminate in more than one station). Grace with 90 lines and seven trunks installed, employs 99 stations and all seven of its trunks--a heavily used system. Two of these colleges with PBX systems (Indiana Tech and Saint Mary-of-the-Woods) also report special Wide Area Telephone Service (WATS) lines.

Holy Cross has a telephone key system with twelve stations, and the remaining seven institutions (Butler, Calumet, Evansville, Indiana Central, Notre Dame, St. Mary's, and Valparaiso) have invested in the newer Centrex I-701 which, for all practical purposes, has unlimited system capacity. The Centrex systems range in size from 125 stations at Butler to 1575 at Valparaiso; all report satisfaction with their

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[3] An explanation of this and the following terms may be found in APPENDIX F.

flexibility and ease of operation. Special services are limited to an FX (foreign exchange) line to the Chicago area from Calumet College and two out-WATS lines at Evansville. Notre Dame tried using WATS but discontinued the service because of problems in controlling use of the lines.

Usage. A few institutions have applied the telephone to instruction for guest lectures in the classroom, student questioning of speakers and instructional group conferencing; Marion College and Evansville's School of Nursing are among them. The telephone is also the nucleus of a dial-access information retrieval system at Valparaiso, where students are able to access ten audiotape recorders located in the university library. In general, however, the telephone serves such administrative functions as student and faculty recruitment, alumni contacts, funding campaigns, and interinstitutional communication. There has been some telephone dial-up computer activity, but in most cases costs have been prohibitive.

Needs. Quite logically, reduced costs for both in-state and out-of-state calls were the most often expressed need of the institutions. With reduced costs, a wider variety of uses of the telephone could be initiated for the general benefit of the institutions.

Television

As with computer, radio, and telephone, the amount of television activity varies greatly from campus to campus. The utilization of television hardware, however, departs from the trend reported for the other media in that some small colleges such as Huntington and St. Meinrad are more extensively involved with television than some of the larger universities. All but two institutions own at least one videotape recorder and one vidicon camera; twenty-seven report much more hardware than this minimum. None of the independent post-secondary institutions operates an educational television station, although Notre Dame owns a commercial station (WNDU) and the University of Evansville is a member of the community television authority which is the licensee of public television station WNIN. Several other institutions, however, maintain satisfactory working arrangements with neighboring commercial television stations and/or cable television systems.

Hardware. Most of the black-and-white record/playback equipment is of the 1/2-inch reel-to-reel EIAJ-Type I standard (twenty-eight colleges own one or more such units). Thirteen institutions have one or more one-inch reel-to-reel videotape recorders of either the IVC 700 to 800 series or the Ampex 5100 to 7000 series. St. Francis also uses an Ampex 660 series two-inch machine. In addition, seven institutions own 3/4-inch videocassette color units, and at least five others are seriously considering the purchase of these more modern units. Thus, the data indicate that the 1/2-inch reel-to-reel EIAJ-Type I videotape recorder is standard black-and-white equipment for the independent institutions, and the 3/4-inch videocassette units will apparently become the color standard.

Other than these 3/4-inch units, color equipment is scarce. The new color studio in the School of Nursing at Evansville and the recently-added color cameras and monitors at the closed-circuit facilities of Saint Francis are the only color systems currently in operation. Calumet, however, has a Title VI grant for a sophisticated color studio and campus distribution system soon to be installed.

Sixteen institutions maintain television studios housing at least a simple two-camera operation with switcher, videotape unit, lights, and audio accessories, although there are larger studios equipped for more complex production. Connected with their studios, nine of these institutions (DePauw, Evansville, Fort Wayne Bible, Huntington, Manchester, Notre Dame, St. Francis, St. Mary's and Taylor) operate campus closed-circuit television (CCTV) systems. Their size varies from the campus-wide distribution systems reported at Huntington and St. Mary's to a single-building dial-access TV facility at Valparaiso. The majority of these CCTV systems are single-channel RF distribution systems, although Manchester operates a four-channel system. All of these studio and CCTV systems were originally financed by government and/or private foundation grants. For the most part, the financial obligations of the systems have been added to institutional budgets.

Programming. The television facilities are used primarily for micro-teaching, speech and homiletics classes, athletics, psycho-motor development assessments, broadcast education courses, and off-air recording. Strong athletics programs in particular have benefited from the newer portable equipment; in fact, at Franklin the Physical Education Department controls all of the school's television equipment.

None of the institutions has produced a credit course taught entirely on television, but the campus studios have originated supplemental lessons for a variety of academic areas. Huntington, for example, has assembled a collection of videotaped interviews with some of its prominent visitors. Calumet has developed an instructional package of "Interviewing Techniques for Social Welfare Case Workers" on videotape. At Valparaiso the facilities produce materials primarily for the engineering fields, and Evansville faculty have videotaped chemistry and physics experiments for repeated classroom use. In addition, Evansville's School of Business Administration cooperates with the Center for Management Education at Evansville and at the University of Chicago to develop programs using television and other media to train people in business and industry. Nursing and other health-related fields at both Evansville and Valparaiso have also become actively involved with televised instruction.

A number of independent institutions participate in cooperative arrangements with neighboring broadcast television stations and CATV (Community Antenna Television) systems. Broadcast education students at Butler, DePauw, Huntington, and St. Mary-of-the-Woods can gain production experience at the TV studios of local stations. Calumet currently produces two series for WCAE (the public television station in the area)--"Conozca Su Comunidad" and "Northwest Review"--and Concordia Senior has occasionally produced single programs for Fort Wayne commercial television. Other institutions have supplied programming to local CATV operators; for instance, programs by Taylor students have appeared on Marion Cable Television, Inc. Also, Goshen is investigating the possibilities offered by South Bend Valley Cable's public-access channel. Cooperative television ventures between independent

colleges and universities, however, have to date been limited to Huntington's producing some psychology tapes for St. Francis and to Notre Dame and St. Mary's sharing a joint department of speech and theatre.

Needs. Few institutions have the broadcast-quality equipment to produce acceptable video materials; consequently, the need most frequently reported is for high-quality instructional programs, particularly for supplemental instruction. This lack has already prompted Anderson to become an Associate Member of the Nebraska Educational Television Council for Higher Education, Inc.(NETCHE), a library which offers its member institutions reduced prices on instructional television materials for on-campus use. Calumet and Huntington are also seriously investigating NETCHE membership. Several other colleges (Ancilla, Concordia Senior, Marian, St. Mary-of-the-Woods, and St. Meinrad) have tried to acquire outside-produced video instructional materials, but as Marian officials reported, "costs presently prevent serious investigation." Most administrators had difficulty in pinpointing those academic departments in particular need of instructional video materials. St. Meinrad named Cultural Anthropology, and Calumet reported needs for its departments of English and Management, but few institutions could be similarly specific. All institutions would prefer the availability of an extensive catalogue from which faculty might choose materials to suit their own classes.

Saving money in the purchase of television equipment and videotape is the second most frequently requested item. The public universities of Indiana are already saving both money and time in purchasing blank videotape through a cooperative arrangement. NETCHE, the Indiana universities, and several high school consortia have found that cooperative buying can reduce the cost of a sixty-minute reel of 1/2-inch videotape from about $30 to $17 or $18. Since many of the institutions surveyed have reported paying high prices for equipment service contracts and are experiencing difficulty in receiving well-timed service, there is further need for cost-savings and better service in engineering support.

Video interconnection seems to be a relatively low priority for all but a few institutions. Valparaiso has already acted on its need for connection to the IHETS Video Network, and an ITFS (Instructional Television Fixed Service--2500 mhz) reception tower, licensed to the Board of Trustees of Porter Memorial Hospital and located between the Valparaiso School of Nursing and the hospital, is to be in operation by March, 1975. Nursing programs at Evansville, Goshen, and Marion also anticipate benefits from the Video Network, and St. Francis has pointed out advantages in using a Network connection to serve the surrounding community. Cooperative program exchange among institutions with academic programs in the engineering sciences was mentioned at Tri-State as being highly desirable. Rose-Hulman stresses the importance of interactive capability rather than simple reception of the IHETS Video Network, and on behalf of the Collegiate Consortium of Western Indiana, the Institute has been investigating interactive television connection among several independent and public institutions.

Summary and Overview

The four media discussed herein--computer, radio, telephone, and television--are in quite similar states of development. The independent

institutions have, in most cases, begun an involvement with these media but have been prevented from developing them to their fullest potential by that problem common to nearly every institution, public or private--lack of funds. Since each institution must, in our society, make extensive use of the telephone, money must be allocated for this resource. But costs are high, and they hinder growth in the use of the telephone beyong those administrative functions (specially admissions and recruiting) most necessary to operation. The telephone is indispensable, but the institutions are paying a high price for this necessity.

The other three media have fared worse by not being as basic to the operation of the institutions, although the computer has in many instances begun to assume the critical status of the telephone. Proliferation of record-keeping requirements alone have led all but the smallest colleges into an increasing dependence on computer services, and several institutions which cannot afford to purchase or maintain on-campus computer facilities must pay high charges to go off campus for these essential services. Judging from the data presented here, one can only assume (even without considering the growing applications of computer-assisted instruction) that in the not-too-distant future the computer will become nearly as vital to administrative functions at most institutions as the telephone is at present.

That all but two of Indiana's independent post-secondary institutions own at least one videotape recorder indicates at least an awareness that television can be useful to education. The limited use made of existing equipment by many institutions may likewise suggest the lack of funds and/or expertise available to pursue that awareness. The reason for insufficient funds for television is clear and understandable: television simply has not been built in as being essential to either administrative functions or academic processes. The fact remains, however, that television can be a vaulable educational asset: it can be used to supplement desirable programs which an institution could not otherwise afford to support, can bring otherwise unavailable resources into the classroom, and can extend an institution's reach and constituency beyond the borders of its campus.

The same advantages pertain in most cases to radio (which is less expensive than television in terms of equipment purchase, operation, and software support), yet radio is even less extensively developed than television. In part because audio alone will not answer some educational needs, at most institutions the advent of television interrupted the development of radio as an instructional medium. Consequently, few of those institutions which operate radio stations allot radio a high enough priority for its instructional potential to be realized.

It thus becomes apparent that recommendations for improving the status of telecommunications among Indiana independent colleges and universities must be concerned with furthering the educational advantages which can be obtained from telecommunications at as little expense as possible. The following chapter presents fifteen such recommendations.

CHAPTER III

RECOMMENDATIONS

As Chapter II illuscrates, the independent colleges and universities in Indiana have entered into few cooperative efforts focusing on telecommunications alone, although a number of consortia (e.g., the Northern Indiana Consortium of Education and the Collegiate Consortium of Western Indiana) are developing to discuss cooperative possibilities in several areas, including telecommunications.[4] The most active exploration of interinstitutional sharing has been among computer personnel (see page 4); cooperation in the areas of radio, telephone, and television has to date been virtually non-existent. Nonetheless, the sharing of telecommunications resources has proven, in Indiana and many other states, its ability to reduce costs, enable more extensive development of telecommunications, and increase the sum of educational resources available to participants.

Our research indicates that all of these end products are desired by the great majority of the institutions surveyed; cost-savings are, at least for the next few years, highly important. Consequently, nearly all of the following recommendations urge cooperation in some aspect of telecommunications. Furthermore, because of ICUI's recent addition to one of the nation's most encompassing telecommunications consortia, the Indiana Higher Education Telecommunication System, many of the recommendations suggest methods of establishing a relationship of benefit to both IHETS and ICUI.

RECOMMENDATION: *The thirty-four colleges and universities studied should be connected to the IHETS voice network at the earliest possible date.*

The telephone is the one communications instrument common to all institutions of higher education, and though its uses vary, its necessity is undeniable. No institution could for long operate without the telephone, yet costs continue to rise, flexibility is limited, and telephone's instructional potential has seldom been realized. Monthly in-state toll charges from $200 to well over $1200 have prompted some institutions to investigate in-state WATS lines, but in the end these WATS lines have too often proven little less expensive than conventional service. Furthermore, cost and equipment inflexibility have hindered use of the telephone as a classroom tool. The central issue thus becomes how to reconcile the institutions' need for increased telephone use with their need to save money.

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[4]For a complete discussion of such efforts, the reader is referred to the report "Interinstitutional Cooperation" of the Study of Independent Higher Education in Indiana.

The implementation of this recommendation would provide immediate cost-savings to the institutions for the large majority of in-state calls. The State Universities Voice Network (SUVON) allows a staff member at any connected institution to call someone at any other connected institution and, where permitted by the local campus, to call off of the network into the surrounding community at rates considerably lower than those for Direct Distance Dialing. It should be pointed out here that the IHETS staff and the telephone companies are considering a reconfiguration of SUVON to improve the service and to adapt it to the tremendous increase in IHETS membership and in traffic since the network was configured. An investigation is also being conducted into including both in- and out-state WATS on a bill-back basis with the SUVON package. Currently, however, the sole charge to IHETS member institutions for the service is a monthly telephone company charge for equipping the campus telephone system to accept the SUVON trunks. This charge is estimated at $15 per SUVON line. Connection to SUVON service might thus enable each institution to save a minimum of several hundred dollars per month on its in-state long-distance telephone bills.

Because the importance of the voice network connections for all thirty-four institutions became immediately apparent, in August of 1974 the ICUI Board of Directors acted on the issue, and funds for the connections were included in the IHETS budget request for the 1975-77 biennium. A detailed proposal for the SUVON connection of these thirty-four colleges and universities, including estimated individual and collective costs, is presented in APPENDIX D-1 along with maps of the current and proposed SUVON configurations. If the General Assembly grants the necessary funds, it is expected that the major part of the service could be initiated by September of 1975.

To prepare for SUVON interconnection, the institutions will need to consider such questions as: (1) which telephones should have SUVON access? (2) should off-network extensions be allowed? and (3) how should SUVON usage information be disseminated? Those few colleges which currently use all of their installed trunk-handling equipment will have further decisions to make. In order to be connected to SUVON, additional trunk capacity will need to be installed (at the campuses' expense), and the cost of this expansion will have to be weighed against the benefits they might receive from interconnection. The IHETS staff will consult with the institutions as they search for answers to these questions.

The importance of implementing this recommendation at the earliest possible date cannot be overstated. A savings of several hundred dollars per month would have a considerable impact on most institutional operating budgets. Even if uses of the telephone were to remain the same, such financial benefits would justify the recommendation. But additional, less tangible benefits stand to be gleaned: the connection would provide a pathway for facsimile transmission, further the sharing of library resources, make more feasible the use of the telephone to bring speakers into the classroom, and facilitate communication both among the faculties of the institutions and among developing regional consortia. Cooperation would be encouraged not

only among the independent colleges and universities but also between the independent and public sectors of Indiana higher education, and such cooperation can only further the best interests of the citizens and the State.

RECOMMENDATION: *The interconnection of ten broadcast radio stations to the IHETS Radio Network should assume a high priority in the planning of the ICUI Board of Directors.*

The ten non-commercial broadcast radio stations operated by ICUI member institutions can be important affiliates in a strong network of public and independent radio stations operating cooperatively for the benefit of students, institutions, communities, and the State. These ten stations themselves could also profit greatly from such an interconnection.

At many institutions the role of the radio station either has been forgotten or was never fully defined. Stations which are student-managed and student-staffed with little faculty advice have in too many cases drifted away from the original responsibilities of the licensee. Further, student management by its very nature cannot provide the continuity necessary to implementation of long-range plans. Thus, many stations have slipped unwittingly into competition with commercial outlets in a market already heavily saturated with "Top 40" programming. This competition in itself is not wrong because a sizable audience should be an important goal of any radio station. But developing programming with precisely the same ideals as those of commercial broadcasting wastes a most important institutional resource.

The redefinition and implementation of programming for instruction, information, institutional promotion, and entertainment will fill the void of varied and high-quality radio programming which many communities experience and will serve the long-range goals of the post-secondary institutions. Many of these stations are operated to provide instruction and experience for students enrolled in journalism, speech, and/or broadcast education courses. It should matter little to the student what the programming concepts are as long as they are fully defined and the work is truly a learning experience. If programming concepts are designed for the listening needs of the audiences on and off campus, then students, institutions, and communities will benefit.

The IHETS Radio Network can, by providing an avenue for program exchange, help the stations offer more locally-produced programming in a variety of formats. The public universities currently connected to the Radio Network are exchanging programming, especially in the public affairs area, and have presented "round-robin" newscasts. The network is limited insofar as the transmission lines currently used are voice grade and not of sufficiently high quality to transmit music. However, as far as the independent institutions' radio stations

are concerned, the limitation is not serious. As mentioned in Chapter II, all of the stations report a desire to obtain programming other than music, which they already broadcast. Here, then, is a vehicle for exchanging instructional and/or informational programming either without cost to the station or at a significantly-reduced cost. Furthermore, the network offers an additional valuable service.

The impetus for the establishment of the IHETS Radio Network was in large part an agreement with the Westinghouse Broadcasting Company to supply its Group W News Service to educational radio stations of IHETS member institutions. The only charge assumed by IHETS to obtain this service for the network was that of a line from WOWO-Fort Wayne, a Group W station, to IHETS central control in Indianapolis. Group W news is "actualities news" which can be edited for incorporation into news broadcasts and which is thus different in kind from the wire services of UPI and AP. As a news service of longer duration and greater depth of reporting than most stations have attempted, Group W makes a valuable addition even to those educational stations which already have a wire service. Group W news also provides considerable educational benefit in training students to edit and prepare professional news broadcasts. Certainly the ability to obtain such a service at no cost would well serve the universally low budgets of the stations.

A detailed outline of the expense involved for each institution and maps of the network both as currently configured and as it might be expanded by this proposal are included in APPENDIX D-2. All ten stations would be capable of receiving programs; two (Butler and DePauw) could also originate on the network. Butler's WAJC and DePauw's WGRE are the only stations currently programming any significant amount of instruction or information; at this time, then, it is unnecessary to install origination capability at the other eight stations. This is not to imply that the remaining independent-sector stations are unimportant but merely reflects needs as they currently exist. As the stations become stronger by being able to schedule more cultural and educational programs and more professional news at little additional cost, budgets will be freed to acquire or produce other kinds of programming. At that point, these educational outlets will have more to offer the network and should receive origination capability.

Indiana ranks fifth in the nation in sheer numbers of college-owned broadcast educational radio stations (California, New York, and Ohio have twenty-five each; Pennsylvania has twenty; Illinois, seventeen; Michigan, sixteen; and Indiana and Missouri, fifteen each--note that Indiana is much the smallest of these states in terms of population and geographical size).[5] Only three of these fifteen (WFIU, WVUB, and WBAA) currently maintain the staff and broadcast hours necessary to qualify for membership in the National Public Radio (NPR), but that does not mean that all Indiana stations cannot, through cooperation, make available to Indiana citizens

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[5] 1974 NAEB Directory of Educational Telecommunications (National Association of Educational Broadcasters, 1974), pp. 54-72.

sound educational programming produced in Indiana for use in Indiana. A network such as the one proposed herein would cover every major population center in Indiana and every geographical section except the southeast and north central areas. With U.S. radio sales of 55,311,000 sets in 1972 alone[6]--for homes and cars as well as dormitories--the medium offers a less expensive, if less glamorous, means than television of reaching a wide spectrum of the population. It is our belief that educational radio in Indiana should be strengthened and encouraged to become the valuable institutional tool it can be. An extremely beneficial step toward this goal would be a meeting of the managers of all educational stations together with some of their administrators to discuss and develop the statewide coordination and leadership in radio which seems so sorely needed.

RECOMMENDATION: *ICUI member institutions should take full advantage of the IHETS State Telpak System in purchasing data communication lines.*

The IHETS State Telpak System is an arrangement with the telephone companies for the bulk purchase of in-state lines at considerable savings to the buyers. The lines are purchased by IHETS in groups of 12, 24, 60, or 240 (called telpaks); IHETS then prorates the cost among the users in a given telpak. Whereas the cost of a full-duplex line at IXC (Inter-Exchange Circuit) rates is $4.68 per mile per month, the same line purchased through a telpak arrangement might cost as little as 19¢ per mile per month. (For a more complete explanation of the Telpak System and its costs, see APPENDIX D-3.)

Reduced line charges for computer terminal connections are needed by each institution which uses outside sources for some or all of its computer services. The study cannot endorse each campus' having its own on-campus computer center because in many cases the volume of jobs to support such a facility is simply not there. The fact remains, however, that computer services have become indispensable to most of these institutions, and they need to reach the sources of such services at the lowest possible expense. The purchase of lines through IHETS' telpak service offers such an opportunity. Butler has already availed itself of a line in Telpak to the IU Computer, entering that network as an alternative to the major expense of installing a computer of its own.

Whenever the independent colleges and universities are connected to the IHETS voice network, there will be some possibility of using SUVON for data transmission. The addition of these institutions will so expand the voice network, however, that frequent or extended use of SUVON for data communication would reduce the quality of service

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[6] 1974 Broadcasting Yearbook (Broadcasting Publications, Inc., 1974), p. 72.

available. Thus, the purchase of lines through Telpak seems to offer the best alternative for reducing line costs and maintaining high-quality transmission in data communications.

RECOMMENDATION: *The ICUI Board of Directors should hire a consultant to survey the economic feasibility of establishing a computer network and, if deemed desirable and practicable, to design such a network.*

At least in part because of the computer needs discussed above, considerable interest has been expressed in the concept of networking by computer personnel at independent institutions throughout Indiana. Several regional consortia are investigating cooperative computer use--the Northern Indiana Consortium of Education (NICE), the Collegiate Consortium of Western Indiana (CCWI), the Consortium for Urban Education (CUE), and the Chicago RSTS Users Development Society (CRUDS) are among them--but the investigations have seldom included the possibility of networking. The preceding recommendation presented a means of reducing line charges for data communication; networking, on the other hand, might offer a means of reducing the costs of the services themselves in addition to those of the lines.

The study recommends that, if at all possible, the consultant be hired from outside of Indiana. Because of the great variation in the size of facilities and in the ideas expressed regarding what networking should be and do, we feel that a disinterested observor can most objectively evaluate the feasibility of a network. The additional problems in ascertaining the funds required for such a venture, the financial impact on each institution, and the support necessary for host institutions all mandate a computer specialist experienced in the problems specific to networking among educational institutions.

In short, we feel that the concept of computer networking has merit, and its further exploration should be undertaken by the ICUI Board of Directors either alone or in cooperation with the IHETS Board of Directors.

RECOMMENDATION: *A vehicle should be created for information exchange and program sharing among Indiana's post-secondary institutions.*

The workshops have made abundantly clear the strong need for a clearinghouse of information about software and programming available at Indiana's institutions of higher education. Too frequently, programs produced in one department are not known to other departments on the same campus, much less to other institutions in the State.

The internal communications break-down is perhaps most common at the larger institutions, but almost all of the colleges, large and small, share an unfamiliarity with the variety of software already in existence around the State. No one is really to blame for the situation, for even if the idea of communicating such information did occur, the vehicle for information exchange does not exist. But given the widely-reported needs for programming in all media and nearly every academic area, it seems unfortunate that faculty members at one institution should spend much time searching far afield for materials available but uncatalogued at another institution just a few miles away.

Partly in response to this discovery, the IHETS Board of Directors has anticipated this recommendation by establishing funds for the IHETS staff to begin compiling a catalogue of software. A design for the gathering of information should be prepared at once with guidance from the Program Development Committee of the SUTCC so that staff may begin its implementation as soon as possible. It is perhaps worth noting that the initial process of compiling the information may require the work of at least one staff member at 50% FTE in order for the job to be thorough. Several workshop participants have suggested the use of computer print-out format for greater flexibility and economy in bringing the catalogue up to date.

As the information is compiled, guidelines should be established regarding use of materials, charges for their use, and methods of delivery. The logical authorship of these guidelines should be with the institutions themselves, although it should be remembered that if the institutionally-imposed controls are too highly structured or too confining, then many benefits of this recommendation will be eliminated. Intra-consortium charges for use of materials should ideally be the same as intra-institutional charges. This recommendation does not propose a profit-making venture for any one institution but rather a cooperative action, coordinated by IHETS, for the benefit of all IHETS member institutions.

The proposed catalogue may lead to fulfillment of another need identified frequently throughout the study, the need for an inter-institutional newsletter. Such a newsletter could not only up-date catalogue information but also review the whole spectrum of telecommunications activities among the IHETS members. It might also provide an avenue for communication concerning program developments, the announcement of meetings, and the formation of academic interest groups; and in general it could open some of the presently closed channels of communication among institutions at both faculty and administrative levels.

A second beneficial off-shoot of the statewide catalogue might be the expansion of the project to include programming available throughout the nation as well as the State. Although such an expansion would require additional staff time and (initially, at least) additional funding, such a service would hold value for others besides Indiana's institutions of higher education. With careful planning and implementation and with adequate funding, Indiana could assume a leadership in the increasingly important service of cataloguing and making known the growing amounts of software produced throughout the country.

RECOMMENDATION: *The ICUI Board of Directors should carefully weigh the television needs set forth in this report and should give top priority for Video Network connections to those institutions whose nursing and/or allied health programs can benefit from the Medical Education Resources Program carried on the network.*

The data about television use suggest that few ICUI members could now derive much benefit from connection to the IHETS Video Network. The cost of hard-wire connections to the spine of the network would in most cases be extremely high, and it would be difficult to justify such expense for little use and less input. Reception from the Video Network could be achieved for some twenty institutions by using existing or proposed ITFS and CATV systems (see APPENDIX D-4), and although specific costs cannot now be determined, these extensions would be far less expensive than hard-wire connections. Lack of need, however, must preclude making many of these extensions also. Although nearly every institution reported needs for television programming, such programs can be obtained by more cost-effective methods.

The nursing and allied health programs at Evansville, Goshen, Marion, and Valparaiso, however, could profit from access to some of the medical programming now carried on the Video Network. In fact, Valparaiso has already participated in an arrangement (see page 10) for its School of Nursing to obtain the reception capability. At present, the School of Nursing at the I.U. Medical Center is equipping a full-color television studio and a building distribution system, and Evansville has put together a sophisticated color studio and distribution system for its School of Nursing. Presumably, these schools will be developing instructional materials for their own use, and it is to be hoped that such materials will be made available for use by others. U.S. Department of Labor statistics project increasing need for nurses in the foreseeable future, and since Indiana's institutions already have a number of fine collegiate and diploma nursing programs, the ingredients exist for cooperative development and sharing of televised instruction in this field. Reception capability on the IHETS Video Network can play a significant role in furthering cooperative efforts.

RECOMMENDATION: *The ICUI member institutions should thoroughly examine group membership in a library of taped instructional materials as a means of providing themselves with sorely needed programming at reduced costs.*

One of the pitfalls of using instructional technology is the temptation to acquire and install hardware before program objectives are fully established. Ideally, an institution must first identify and define program needs, list objectives, and then prescribe the staff and hardware best suited to meet those objectives. Although seeming to diminish, this problem of hardware mandating programming has been most prevalent in television. Too many videotape recorders were purchased before objectives were fully defined, and many an institution, after spending much effort and more money, has found that more than a videotape recorder and camera are required to produce usable, high-quality video materials. Thus, although equipment may be extensive, the needs for programming continue.

Because this state of affairs is all too widespread, a number of organizations with the necessary resources--time, money, and professional talent--have developed libraries of instructional materials for wide distribution. One of the largest of these, and the only videotape library dedicated to post-secondary education, is that of the Nebraska Educational Television Council for Higher Education (NETCHE; see page 10). Formed originally to meet the needs of Nebraska's public and private post-secondary institutions, NETCHE has been so successful that it has opened its library of over four hundred supplementary instructional sequences to out-of-state institutions as well. Membership costs are based on student enrollment, and membership offers a number of services in addition to reduced rental fees for the NETCHE tapes. Upon investigation, the IHETS staff has found that cooperative group membership for IHETS members would cost even less per institution than single membership while retaining most of the same benefits. Other libraries of videotapes, audiotapes, and CAI software packages might offer a similar opportunity.

Program needs are real, especially among the independent institutions; black-and-white hardware, at least, is already present and color videocassette units are increasingly available; and the opportunity exists to obtain programming at greatly reduced prices. Agreement among the institutions seems to be the only requirement attendant to immediate realization of cost-savings in meeting at least some of these academic program needs. The ICUI institutions, it would seem, can only gain from obtaining a cooperative group membership in NETCHE and/or other software libraries, and the ICUI Board of Directors should undertake an active investigation of detailed possibilities at an early date either through IHETS or on its own.

RECOMMENDATION: *The ICUI member institutions should cooperatively purchase telecommunications hardware, software, and engineering support services.*

A good deal of evidence supports the concept of consortium purchase of telecommunications hardware and software. For some time, Indiana's public post-secondary institutions have cooperatively purchased videotape stock, and NETCHE members are able to get blank videotape at price reductions of forty to forty-five percent. With thirty-one independent colleges and universities using blank videotape stock and seventeen using blank audiotape stock, significant cost-savings could be assured through consortium purchase. The same principle can also apply to the purchase of telecommunications hardware. Many of the independent institutions plan to acquire additional equipment in the next few years, particularly the 3/4-inch videocassette units, and cooperative purchasing could effect substantial reduction in the costs for these items. It could also facilitate television equipment standardization as that may seem desirable (see page 8) and could ease the transition to color equipment for those institutions which want to produce significant amounts of high-quality programming.

Another part of this recommendation speaks to the frequently expressed need for adequate engineering support services. Simply stated, the problem is to keep equipment in satisfactory working order after warranties have expired. A few institutions have staff or faculty members with the engineering ability to maintain their hardware, and as long as the institutions also have the necessary test and repair equipment, the arrangements are workable. Others have signed service agreements, usually with the equipment supplier; these contracts are commonly charged at a percentage of the cost of the equipment to be maintained. Such arrangements have met with mixed success, with high costs being the most widely expressed source of dissatisfaction. Most institutions, however, have neither the engineering staff capable of equipment repair nor the funds available for service contracts. The staff at these institutions must simply wait until equipment fails and then hire outside services. Consortium arrangements might alleviate at least some of these problems.

It seems to us that the logical center for such cooperative purchasing efforts is IHETS, where a nucleus staff now performs on a limited basis such duties as consulting, taking bids, billing the institutions, and arranging deliveries. With regard to engineering support, IHETS could supply, on the one hand, the simple administrative function of arranging for a state-wide service contract; on the other hand, IHETS could (with cooperative funding) actually engage one or more engineers to maintain and repair the equipment at member institutions on a full-time basis. The greater advantages lie in this latter suggestion since equipment would have preventive maintenance and regular service, and repair or replacement parts could be charged at cost.

As with the recommendation for SUVON connection for the independent institutions, we are not proposing that the institutions incur

additional costs, however greatly reduced from the usual price. These items and services are already being bought and are necessary to involvement with telecommunications. Consortium purchase of telecommunications software, hardware, and engineering support services thus offers the possibility of concrete savings in necessary purchases.

RECOMMENDATION: *Workshops in the use of telecommunications should be arranged on an annual basis for the faculties of Indiana's post-secondary institutions.*

In one form or another, this proposal was voiced at nearly every workshop held around the State. Although many workshop participants expressed their pleasure in meeting with colleagues from other institutions, in learning about IHETS, and in discovering the telecommunications activities at other institutions, a recurring appeal was "We have all this equipment--now what do we do with it?" Although the original concept of the study's workshops included discussion of recent developments in instructional technology and a general orientation to telecommunications for "non-technical" faculty, postponement of the workshops made such an approach impossible (see page ii). Nevertheless, it is our feeling that such workshops have great merit and should be held annually for the faculty members of both independent and public post-secondary institutions.

At some of the larger universities where facilities are extensive and where sizable supporting staffs are employed, those staffs might sponsor on-campus workshops for their own faculties. Such an arrangement, however, would exclude the smaller institutions where the need for these workshops is at least equally strong. It would seem, therefore, that the IHETS staff--with its necessity of keeping its expertise current--would be the logical source for faculty workshops in telecommunications. In fact, IHETS has recently undertaken the implementation of at least a first series of such workshops. They should be continued on an annual basis by either IHETS or ICUI. It would not be feasible to have only one large workshop each year; therefore, a series of regional workshops will be necessary both for valuable hands-on experience and for the small groups necessary to individualize the instruction. If, as with the workshops conducted during this study, the host institutions could provide their facilities free of charge, the expense of the workshops could be concentrated on obtaining guest authorities.

RECOMMENDATION: *Each campus of the ICUI member institutions should designate an IHETS Coordinator for that campus.*

There needs to be a single person on each ICUI campus bearing the responsibility for internal communication regarding IHETS, both in disseminating information about IHETS activities, procedures, and opportunities and in feeding information back to the IHETS staff and to ICUI. The coordinator need not be an administrator but must be a staff member interested in telecommunications. The duties of a coordinator might take about 25% FTE, depending, of course, on the size of the institution and the extent of its involvement with IHETS. The fact remains, nevertheless, that if the System is to profit its members, a regular channel of communication must be established. The burden cannot be borne entirely by the IHETS staff; it will take an institutional commitment.

RECOMMENDATION: *ICUI should establish information channels for its representatives on the IHETS Board of Directors, the SUTCC, and the panels, advisory panels, and conference groups.*

A number of the uncertainties which prompted this study also face those who attempt to represent ICUI in the IHETS organizational structure. To date, only the one ICUI member on the IHETS Board and the four ICUI members serving on the SUTCC have been appointed, but already the problems of attempting to represent thirty-two discrete entities have emerged. Appointments to the various IHETS panels, advisory panels, and conference groups should be made as soon as possible in order to widen and equalize ICUI's representation. But even were there one position for each independent institution available on these groups, the problems would only be compounded, because then there would be thirty-two people each trying to speak for thirty-two colleges and universities. Lack of established informational channels within ICUI would quickly turn the situation into a nightmare.

In order ably to represent ICUI as an organization, these representatives need information regarding the telecommunications activities, plans, and needs of the ICUI member institutions as well as a general understanding of institutions' philosophies and goals. This study provides some of the necessary informational support as of November, 1974, and the Study of Independent Higher Education in Indiana supplies other kinds of essential information, but these ICUI representatives will need to have current information in order to answer for the needs and wishes of their constituency in a meaningful way.

It would seem to be the responsibility of ICUI to provide this information to its representatives through clearly established channels; it is a problem internal to ICUI. Clearly, this recommendation

entails additional work for the ICUI office. Since the President of ICUI cannot be expected to devote a large percentage of his time to IHETS alone, our recommendation points to the employment of an additional ICUI staff member either half or full time. It may be that the IHETS Coordinators proposed above can undertake to report to ICUI on some regular basis, and this arrangement may prove sufficient while ICUI involvement in IHETS is still relatively young. Given the unique circumstances of ICUI membership in IHETS, however, the ICUI Board of Directors will need sooner or later to consider seriously the extent to which it wants to participate in IHETS activities; if its member institutions are to be adequately represented and are to participate fully in IHETS, then most probably that representation will require some financial outlay in support of its representation.

RECOMMENDATION: *Relationships between the independent institutions and neighboring public television stations, commercial broadcast stations, and CATV systems should be strengthened.*

Twenty-five television stations broadcast in Indiana, with seven of these operating as non-commercial, public stations. In addition, more than sixty-six communities are presently served by cable television systems (see APPENDIX C-2 for a list of CATV systems near the independent institutions). Add to these television facilities the more than 170 AM and FM commercial radio stations in Indiana (not to mention the fifteen college- or university-owned educational stations) and the great potential for cooperative arrangements becomes evident.

Over the past few years, a number of independent institutions have been cooperating with nearby broadcast stations and/or CATV systems. The majority of arrangements for program production have been rather casual, one-time ventures; the internship arrangements have been more long-lasting but have only affected the institutions and stations internally and have produced no immediate benefits to either party in terms of audience size or community service. In other words, although both parties seem to have profited equally, not all of the possible benefits are being realized.

If students can benefit from producing a single program for a commercial station or CATV outlet, continuing responsibility for the production of a whole series of programs should bring greater gains in professionalism; conversely, the station or CATV outlet could then use the time and money saved by such a venture for other projects of its own. The outlet would profit from having its audience enlarged by the community programming and from the good public relations derived from cooperation with the college. In turn, the college could benefit from increasing its own audience and from improving town/gown relations, and the community at large would gain from having local-interest programming available on a regular basis, particularly if it were educational or informational.

We stress this recommendation because the potential of cooperation between Indiana's independent institutions and local broadcast or cable concerns is only beginning to be appreciated. Given the additional likelihood that interest in external degree programs will intensify in the foreseeable future, it would be most worthwhile for the institutions to start now to strengthen existing relationships and to initiate new ones for their own benefit and that of their communities.

RECOMMENDATION: *The IHETS Video Network with Teleresponse should be given serious consideration by state professional academic associations as a vehicle for faculty seminars.*

This recommendation is presented, not as a responsibility of ICUI, but rather as the result of a constantly-recurring theme heard throughout the workshops: the need for faculty members to keep up in their respective disciplines and the difficulty of finding enough time for such professionally necessary activity. Reading in itself will not always serve; attendance at seminars and meetings of professional academic associations is also required. This recommendation does not propose that the Video Network be used exclusively for such activities; on the contrary, personal contact among colleagues must be maintained on a statewide as well as a regional basis. However, it seems that use of the IHETS Video Network, especially with the instantaneous talkback system (Teleresponse) currently being implemented, might allow more frequent statewide meetings with larger attendances than are now feasible.

To take a hypothetical case, psychology professors from all Indiana colleges and universities might go to eleven locations around the State to meet with colleagues from the same regions. Part of the meeting could include a televised presentation by a distinguished lecturer and/or a panel of speakers located at a campus with origination capability, and the professors around the State could question the speakers and carry on a discussion via Teleresponse. With appropriate arrangements, the session might even be taped for future use in classes or for faculty unable to attend. Given the limited travel budgets of most departments these days, such a use of the Video Network might prove most attractive.

The same procedure could be followed to bring noted speakers to the State in other circumstances as well; for example, several English departments might pool some of the funds from their departmental speakers budgets to acquire an outstanding scholar whom, individually, they might not be able to afford. The numerous possibilities suggested by this use of the Video Network deserve serious attention.

RECOMMENDATION: *Members of the College and University Round Table of the Indiana Library Association should investigate with IHETS the services which IHETS could offer them.*

Librarians interviewed during the course of the study expressed interest in using the IHETS voice and video networks as vehicles for interinstitutional resource-sharing and communication among libraries. They continually pointed out that surely some of the most educationally useful types of sharing could be developed through facsimile transmission, hard-copy exchange, microfiche exchange, and slow-speed data communication among college and university libraries. Perhaps through a study committee on interinstitutional communication, the Round Table should investigate the many services IHETS offers. In addition, it might be valuable to coordinate these efforts with those of the Indiana Cooperative Library Services Authority (InCoLSA), which is already studying Ohio's library exchange system. With the possibility of direct telephone hook-ups to the ICUI members and the cost-savings available through Telpak purchase of communications lines, the opportunities exist to enrich library resources in all parts of the State to the benefit of all Indiana citizens.

RECOMMENDATION: *The need-assessment and evaluation of telecommunications usage should be continued on a regular basis.*

The work begun by this study of the status of telecommunications in Indiana independent higher education will need to be continued if ICUI is to participate fully in the IHETS consortium and is to realize optimum benefits from its involvement with telecommunications in general. It will undoubtedly be necessary to bring together representatives of each private college or university in order best to assess needs and evaluate telecommunications use; such dialogue should, in addition, enable ICUI to provide the informational support necessary to its IHETS representatives. Since the person appointed IHETS Coordinator will not alone have the authority to formulate goals and needs for his or her institution, it may be advisable for each institution to appoint a study group to determine how telecommunications can best serve that institution's goals. The group could then report--perhaps through the IHETS Coordinator--to ICUI and thus to the ICUI representatives in IHETS. The precise method for continuing on a regular basis the cooperative efforts exemplified and in some measure sparked by this study will, of course, need to be determined by the ICUI Board of Directors itself.

Concluding Note

All of these recommendations have been formulated in an attempt to improve telecommunications use and, consequently, benefits for Indiana independent higher education, particularly as those benefits may be derived from ICUI's membership in IHETS. It must not, however, be inferred that the study staff wishes to encourage any of these institutions into an involvement beyond their means or desire. There are some institutions which seem to have little need for instructional technology beyond the current level of usage; others are prevented by scarce funds from the telecommunications utilization they would like; and still others have strong and justifiable needs for the aid telecommunications might offer in strengthening their programs without depleting restricted budgets.

We have attempted to point out that some of the educational advantages of telecommunications are currently going unnoticed and that even when known they often demand measures too expensive for a single institution to initiate or maintain. That interinstitutional cooperation can facilitate telecommunications development has been demonstrated repeatedly; IHETS is a working example. The term "interinstitutional cooperation" has, however, developed dangerously positive connotations; no one wants to appear uncooperative or deliberately obstructionist, and care must be taken that the threat of such a label does not become a new form of social blackmail to coerce institutions into a spurious cooperation which they neither need nor want.

These fifteen recommendations do not in themselves represent a unified theory of how institutional needs should be met; they are, rather, a group of proposals which can be developed and matured for effective, efficient use of telecommunications. Neither are the recommendations intended to challenge the founding philosophies of the institutions but rather to help the institutions conceive new means of practicing those philosophies.

CHAPTER IV

CONCLUSIONS

The recommendations presented in Chapter III are based on and indicative of the two primary conclusions drawn from the study data: (1) that telecommunications media are or can be valuable for most of Indiana's independent post-secondary institutions, and (2) that their membership in IHETS offers an advantageous opportunity to enhance their involvement with telecommunications.

These thirty-four colleges and universities have in all cases embarked on an involvement with at least some media of telecommunications, even if, for whatever good reason, subsequent developments have lagged. We have attempted to point out that telecommunications can augment an institution's educational resources and even support increased educational activities. Further, some economies can be effected by means of educational technology (e.g., using the telephone rather than increasingly expensive transportation to bring lecturers into the classroom). None of the institutions are so small or so large that they cannot benefit from the improved use of at least one of the four media we have dealt with.

We have also shown that there are increased economies inherent in sharing telecommunications resources, especially where, as the data indicate, equipment is already present on many campuses. This factor becomes particularly important since in many cases the reasons for limited involvement with telecommunications appear to have been budgetary. Consequently, our recommendations have stressed cooperative actions which can, by reducing costs, help to make possible a number of beneficial expansions. Action through IHETS in particular has been emphasized because IHETS is the existing avenue for telecommunications cooperation in Indiana.

Of course, the study's recommendations are not the only means of improving the status of telecommunications among these thirty-four institutions; they simply represent what we feel to be the most viable means at present of enriching the institutions' resources through technology. We do not propose telecommunications as a panacea for the problems of higher education. If, however, improvements are made to encourage the instructional applications of these media and to develop their proper utilization, telecommunications will have a most positive effect on Indiana independent higher education by lowering some costs, by making possible the development of some new programs and technologies through sharing resources, and by strengthening some academic programs.

Although the purposes of this study have been to survey and analyze the telecommunications status of independent higher education in Indiana and to make recommendations relevant to needs for technology, it must be emphasized that there is a distinct difference between technology itself and the proper utilization of technology. For example, regular use of the telephone as nothing more than a

utility for administrative communication constitutes under-utilization of a technology; it is time to re-evaluate the conventional uses of the telephone to meet the institutions' present needs for economy and instruction. After all, the telephone or any other piece of hardware is little more than the use made of it. Hardware itself is passive, awaiting intellectual command in order to serve.

The point is that to embrace technology is not in itself to embrace the usage conducive to institutional excellence. An analysis germane to the objectives of the institution and its instructional ideals coupled with an understanding of the uses of the available technology is a prerequisite to any successful utilization of these technologies. No amount of study, no amount of recommendation, and no amount of outside "help" can do for the institutions what they must, separately or collectively, do for themselves. We most certainly understand that not every institution will move to implement each recommendation; however, we hope that the mere consideration of these recommendations will be a valuable process. Each institution must assess each recommendation and determine its own level of involvement according to its goals. The acceptance (or rejection) of an institutional commitment to educational technology--whether computer, radio, telephone, television, or some other medium--must precede any other actions taken as a result of this report. Collectively, the institutions, perhaps through ICUI, can then further develop their commitments to telecommunications and set the necessary course for proper utilization.

To keep pace with developments in telecommunications, great strides must be taken. We herewith present data and recommendations to guide the ICUI Board of Directors and the staffs of the thirty-four independent colleges and universities of Indiana along the path to cost-efficient, instructionally-effective utilization of telecommunications.

APPENDIX A

GENERAL STUDY INFORMATION

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APPENDIX A-1

PROPOSAL TO THE LILLY ENDOWMENT, INC.

BACKGROUND

IHETS: A Synopsis. The Indiana Higher Education Telecommunication System (IHETS) was created by the General Assembly in 1967. Funded publicly, through biennial appropriations, this consortium now includes the following members: Ball State University, The Independent Colleges and Universities of Indiana (ICUI, Inc.), Indiana State University, Indiana University, Indiana Vocational Technical College (IVTC), Purdue University, and Vincennes University. The consortium and its networks comprise an instrument enabling independent institutions, state universities, regional campuses, IVTC, and the Statewide Medical Education Plan (authorized under separate legislation) to mobilize and share their educational resources.

Since its authorization in 1967, IHETS has grown into a sophisticated telecommunications service which includes as component parts a computer-controlled television network, a classroom-to-studio talkback capability, and the IHETS state telephone network which is used for both voice and data communication (computers, teletype, etc.). As an organization, IHETS also surveys educational needs and works to develop applications of various media (telephone, teletype, television, radio, computers, etc.) which will meet those needs and attain other valid educational objectives.

Overall control and supervision of IHETS is presently vested in a seven-member Board of Directors consisting of a representative from each constituent institution. This Board is the chief policy-making body of the System, and it serves as the sole vehicle through which institutional commitments are made to interuniversity projects.

Addition of Independent Institutions

The 1967 Act specifically recognized "a need for sharing educational resources between public and private institutions of higher education in Indiana" as a means to multiplying "the utilization of the total investment in higher educational resources in Indiana."

Underscoring this was H. B. 1337, enacted in March of 1973, which gave the Board of Directors of the ICUI, Inc. equivalent status with the Boards of Trustees of the public institutions. In anticipation of this, the entire IHETS system has been designed so that nothing would exclude extension of service to independent institutions.

USE AND APPLICATION OF FUNDS SOUGHT

The first step in providing service to thirty-two independent institutions is accumulating both individual and collective data respecting their resources and telecommunications status. Dr. Jellema's study -- with which close cooperation is intended -- will help identify shareable resources. Certainly no campus is completely self-sufficient in educational services and neither is any independent institution so small that it cannot reasonably expect to have resources of value to another

post-secondary institution. On the other hand, gathering data on hardware facilities and their use in learning requires a specialized background. And if one is to secure meaningful results he must go beyond a simple inventory of hardware.

Before these schools can select those technical instruments which will foster the attainment of their educational goals, it is clear that appropriate faculty and administration must receive some orientation to telecommunications. Such an orientation will enable them to select, more judiciously, those instruments most tailored to their needs. The orientation will include demonstrations, reviews of research, and discussion of the educational infrastructure which must underlie successful utilization of technological support. A major purpose of the workshops proposed is the achievement of these ends.

It is also constructive to demonstrate, through the workshops and campus visitations, that the benefits of educational technology need not be prohibitively expensive or always borne alone. In the independent sector there is a tendency to overlook attractive possibilities of cooperative cost-sharing because the consortium arrangements which facilitate shared costs are still remarkably few. Consequently, this proposal seeks funds to: (1) Survey the telecommunications equipment and facilities of independent institutions, (2) Explore their present and potential use with special attention to cooperative possibilities, (3) Develop a prioritized list of specific recommendations for extending service to independent institutions including cost projections for each, (4) Retain the study staff for nine months past the completion date to assist IHETS in the implementation of recommendations resulting from the study.

SCOPE OF STUDY

On behalf of the thirty-two member institutions of the ICUI, Inc. the study will survey and analyze:

1. Available telecommunication facilities, such as

    a. Telephones and the nature of the campus telephone installation

    b. Television equipment: cameras, monitors, and videotape recorders with attention to compatibility of equipment among the institutions

    c. The degree of communications integration existing between the institution and its community as a result of any of the following methods:

        1) Cooperation with existing commercial stations

        2) Facilities for receiving signals from public broadcasting stations

3) Community cable

4) Radio facilities (broadcast station or campus-wired system)

5) ITFS (Instructional Television Fixed Service)

d. Computers -- with attention to their compatibility with computer facilities at other institutions.

2. The felt and unfelt needs for telecommunication utilization. Special attention will be focused on

a. Telephone adequacy and usage level. Figures on long-distance toll charges will be compiled for each institution.

b. The use and need for instructional television including its potential for sharing human and instructional resources with other post-secondary institutions -- public and independent.

c. The use of radio facilities -- for community service, for instruction, etc.

While the following list is by no means exhaustive, it illustrates the sort of inquiries the study will make.

a. Is the independent institution connected to the community cable system and can it originate programming into homes? If no cable exits, is the independent institution involved in any planning for cable?

b. Does the independent institution use commercial television or radio for broadcasting courses or does it give credit for any courses which the station itself may broadcast?

c. Does the independent institution have courses in radio and television production which use commercial broadcasting facilities in any way? Does it have any interest in such courses?

d. Seven, and soon eight, public broadcasting stations serve Indiana. Does the independent institution use any of these public television facilities to reach adults or students in its nearby constituency?

e. Building upon the preliminary surveys of Dr. H. W. Alexander of Earlham, the study will explore any interest in computer sharing. Has the institution developed any Computer Assisted Instruction (CAI) capability? Has it looked at the advantages or value of participation in large systems such as the PLATO System used at the University of Illinois (Urbana)?

STUDY METHODS AND ACTIVITIES

Questionnaire

Previous to the employment of the staff proposed herein, IHETS will secure the following information by questionnaire and telephone follow-up:

1. The names, addresses, and telephone numbers of administrative personnel who should be contacted at each institution.

2. Those departments and faculty members which have a high degree of interest in the educational application of telecommunications.

3. Those faculty members and departments which ought to have a significant interest in telecommunications by virtue of their academic pursuits: broadcasting, speech, journalism, information processing, computer technology, those sciences which have successfully employed learning technologies (biology, microbiology, astronomy, etc.), and those applied sciences which are interested in educational technology from a technological point of view (electrical engineering, solid state physics, electromagnetics, etc.).

IHETS will determine the availability of personnel from the independent institutions during the summer months when this survey will be conducted.

Date for completion of this step: February 1, 1974

Workshop

With the assistance of Dr. Robert E. Martin, President of ICUI, Inc. and the Presidents of those institutions comprising ICUI, Inc. the coordinator of this study and the IHETS staff will conduct a series of approximately six regional workshops for administrators and faculty members identified through the questionnaire. The purpose of these workshops, conveniently located near the institutions involved, would be to:

1. Explain, and where possible demonstrate, the growing applications of educational technology which promise to be of growing utility to them.

2. Acquaint participants with the operation, facilities, and services of IHETS.

3. Suggest ways in which these services might be provided to and utilized by the independent institutions.

4. Explain and discuss the economies which can be effected through the cooperative uses of technology such as the telephone cost savings available through the IHETS state telephone network.

5. Explain the purposes of the forthcoming survey and prepare the members of these institutions for on-site visitations by the survey staff.

Date for completion of all workshops: April 15, 1974

On-Site Visitations and Interviews

The purpose of these visitations and interviews is to enable the survey coordinator and members of the IHETS engineering staff to view available facilities and to assess any technical problems which might exist at a particular location. In short, these interviews and visits will be the primary method of securing the information outlined in the section above entitled "Scope of Study."

Date for completion of all visits and interviews: August 1, 1974

Report Preparation

The month of August will be devoted to four tasks:

1. Compiling all information into a report.

2. Offering, as part of this report, recommendations concerning preliminary steps which must be taken on behalf of the independent institutions to enable them to benefit from cooperating in the operations of the IHETS consortium.

3. Securing estimates of the costs required to accomplish each of the recommendations.

4. Assigning priorities to these recommendations. This will be accomplished through consultation with the Board of the ICUI, Inc.

Date for completion of the report: September 1, 1974

Printing and Dissemination

The report will be printed during September 1974 and copies made available to: the presidents of the independent colleges and universities, the presidents of the public post-secondary institutions, the IHETS Board, the Commission on Higher Education, and to other interested parties.

Date for completion of printing and distribution: October 1, 1974

RECAPITULATION OF DEADLINES

Step	Completion Date	Time Allotted
Questionnaire completed	February 1, 1974	4 weeks
Workshops completed	April 15, 1974	10 weeks
Visits and interviews completed	August 1, 1974	15 weeks
Report preparation	September 1, 1974	4 weeks
Printing and dissemination	October 1, 1974	4 weeks

COORDINATION WITH THE STUDY OF INDEPENDENT HIGHER EDUCATION

It is understood that the study of independent higher education in Indiana (conducted by Dr. D. W. Jellema and financed by a grant from Lilly Endowment, Inc.) will:

1. Engage in an historical review and survey the present status of independent higher education in Indiana.

2. Analyze areas of weaknesses and strengths with emphasis on recommendations for improvement.

3. Identify methods of possible cooperation between collegiate institutions - public and independent, and independent and independent.

4. Recommend specific programs and procedures for strengthening Indiana's system of independent higher education.

5. Develop a complete financial analysis of funds required to carry out the recommendations on both a short and long term basis.

Every effort will be made to render this study supportive to Dr. Jellema's efforts.

SURVEY STAFF

The survey staff will be housed in the IHETS offices at 1100 West Michigan Street where they will have daily access to the engineering and consultive resources of the IHETS staff. Personnel will be comprised of a coordinator and a secretary (both full time) and the part-time services of IHETS staff engineers.

Coordinator for Independent Institutions

This person will be responsible for developing, coordinating and conducting the survey and for writing the final report. His duties will require experience in the use and applications of technology in higher education including a good background in media research. Experience with surveys and a working knowledge of Indiana higher education will be sought. Since the coordinator will be the primary contact with administrators and upper echelon faculty, the person should be mature, have a broad education, a pleasing personality, and have competence in both written and oral communication.

The coordinator will be chosen jointly by the President of the ICUI, Inc. and the Executive Director of IHETS and must be available for work on a full time basis early in 1974. The salary will be $16,000 annually.

Secretary

The duties and responsibilities of this full time position will include: typing, taking dictation, and transcribing material into a neatly typed format; this person will make appointments and arrange travel for the coordinator and any IHETS staff which may accompany him; the secretary will will help schedule and make facilities arrangements for meetings and workshops supporting the survey. The salary will be $7,000 annually.

Engineering Staff

While these services might be secured via consultation, it is believed that paid release time of staff engineers skilled in the educational application of technology will better serve the survey's purposes for the following reasons:

1. Staff engineering time is less expensive than outside consultation.

2. Staff engineers are better acquainted with the present capabilities of IHETS and similar statewide communication networks.

3. Staff engineers have a greater reservoir of experience with higher education's special requirements for instructional technology.

4. Staff engineers have experience with needs surveys having recently participated in one for IVTC.

The cost of release time will not exceed $7,000.

Accounting Services

Accounting and bookkeeping services including the assumption of fiduciary responsibilities will be provided by Indiana University. An audit suitable to the requirements of Lilly Endowment, Inc. will be provided upon completion of the project. Lloyd Keisler, Controller of Indiana University, has confirmed that the cost of these services will be 3.5% of the project's total cost excluding the accounting services item.

UTILIZATION OF FINDINGS

The findings of this study will form the basis for the following specific actions:

1. In conformity with the study's recommendations, the Board of Directors of the ICUI, Inc. will request the installation of needed services from the IHETS Board. Such a request will take into consideration the priorities established by the ICUI, Inc. as well as the financial resources of the IHETS Board.

2. In addition, the findings of this study will be used to support adequate legislative funding of requests made by the IHETS Board in furtherance of the study's recommendations.

3. If this study reveals that cost-sharing of regular telephone service, WATS service, or leased line services for any other purposes will result in significant savings to independent institutions, the IHETS Board will integrate these institutions into its existing cost-sharing arrangements.

4. Until the service needs discovered by this study are met, or rendered inoperable by changing circumstances, these prioritized recommendations will become part of IHETS' long range planning.

In addition to the specific actions above, the study will have the following useful applications:

1. Findings of the study will aid the Commission on Higher Education in implementing phase one of their Indiana Plan for Postsecondary Education, particularly those sections which call for:

   a) Appropriate consortia among public and independent institutions to increase cooperation and service,

   b) Improved independent sector participation in the statewide system of post-secondary education.

2. The study will support Dr. Jellema's effort by providing greater depth and specific professional findings in this area of growing importance.

3. Implementation of the study's findings will clearly facilitate greater cooperation and coordination among public and independent institutions.

4. The conduct of the study along with its supporting workshops will provide independent sector personnel with a valuable understanding of the growing applications of educational technology and with insights into the very real benefits of interinstitutional consortia.

SUMMARY OF PROPOSED BUDGET: FEBRUARY 1, 1974 - JUNE 30, 1975

ITEM		MONIES REQUESTED FROM LILLY ENDOWMENT	MONIES PROVIDED BY APPLICANT	TOTAL
DIRECT OPERATING COSTS	Coordinator	$22,667		$22,667
	Secretary	9,917		9,917
	Engineering Svcs	9,917		9,917
	Fringe Benefits	5,754		5,754
SUBTOTAL FOR SALARIES		$48,255		$48,255
OTHER DIRECT OPERATING COSTS	Travel	$ 2,800		$ 2,800
	Per Diem	1,500	$1,000	2,500
	Office Equipment	500	500	1,000
	Space Rental		1,200	1,200
	Bookkeeping & Audit	2,161	900	3,061
CONSUMABLE SUPPLIES	Office Supplies	$500		$500
	Postage	600		600
OTHER EXPENSES	Workshops	$2,000		$2,000
	Printing Costs	2,000		2,000
TOTALS		$60,316	$3,600	$63,916

APPENDIX A-2

INSTITUTIONS INCLUDED IN IHETS/ICUI STUDY

The following is a list of the colleges and universities included in the Study of Telecommunications in Indiana Independent Higher Education. Ancilla Domini College and Holy Cross Junior College are not now members of ICUI but have been investigating membership, so at the request of ICUI, these two colleges were added to the study.

Ancilla College Sister Joel Lampen, President	Donaldson, 46513	(219)936-9936
Anderson College Robert H. Reardon, President*	Anderson, 46011	(317)644-0951 Ext. 201
Bethel College Albert J. Beutler, President	Mishawaka, 46544	(219)259-8511 Ext. 48
Butler University Alexander E. Jones, President*	Indianapolis, 46208	(317)923-3451 Ext. 201
Calumet College Rev. John M. Lefko, C.PP.S., Pres.	East Chicago, 46312	(219)397-9197
Concordia Senior College Herbert G. Bredemeier, Pres.	Fort Wayne, 46208	(219)748-7105 Ext. 229
DePauw University William E. Kersetter, Pres.	Greencastle, 46135	(317)653-9721 Ext. 216
Earlham College Franklin W. Wallin, President	Richmond, 47374	(317)962-6561
Fort Wayne Bible College Timothy M. Warner, President*	Fort Wayne, 46807	(219)456-2111 Ext. 202
Franklin College Wesley N. Haines, President	Franklin, 46131	(317)736-8441 Ext. 150
Goshen College J. Lawrence Burkholder, Pres.	Goshen, 46526	(219)533-3161 Ext. 220
Grace Seminary and College Herman A. Hoyt, President	Winona Lake, 46590	(219)267-8191

Hanover College John E. Horner, President*	Hanover, 47243	(812)866-2151 Ext. 225
Holy Cross Jr. College Brother John Driscoll, Dean	Notre Dame, 46556	(219)233-6813
Huntington College E. DeWitt Baker, President	Huntington, 46750	(219)356-6000 Ext. 30
Indiana Central College Gene E. Sease, President*	Indianapolis, 46227	(317)787-6301 Ext. 210
Indiana Institute of Technology Charles W. Terrell, President	Fort Wayne, 46803	(219)422-5561 Ext. 1
Manchester College A. Blair Helman, President	North Manchester, 46962	(219)982-2141 Ext. 210
Marian College Louis C. Gatto, President	Indianapolis, 46222	(317)924-3291 Ext. 212
Marion College Woodrow Goodman, President* and Sec-Treas. of ICUI Board	Marion, 46952	(317)674-6901
Northwood Institute Arthur J. Kaherl, Dean	West Baden, 47469	(812)936-9971 Ext. 24
Oakland City College James W. Murray, President	Oakland City, 47660	(812)749-4781 Ext. 20
Rose-Hulman Institute John A. Logan, President* and Chm. of ICUI Board	Terre Haute, 47803	(812)877-1511
Saint Francis College Sister M. JoEllen Scheetz, Pres.	Fort Wayne, 46808	(219)432-3551 Ext. 255
Saint Joseph's College Rev. Charles Banet, President* and Vice-Chm. of ICUI Board	Rensselaer, 47978	(219)866-7111
Saint Mary-of-the-Woods College Sister Jeanne Knoerle, Pres.	St. Mary-of-the-Woods 47876	(812)533-2181
Saint Mary's College William A. Hickey, Acting Pres.	Notre Dame, 46556	(219)284- -4328
Saint Meinrad College Very Rev. Hilary Ottensmeyer, Pres. Rector	Saint Meinrad, 47557	(812)357- -6520
Taylor University Milo A. Rediger, President	Upland, 46989	(317)998-2751 Ext. 202
Tri-State College Carl H. Elliott, President	Angola, 46703	(219)665-3141 Ext. 227

University of Evansville Wallace B. Graves, President*	Evansville, 47701	(812)479- -2151
University of Notre Dame Rev. Theodore M. Hesburgh, Pres.	Notre Dame, 46556	(219)283- -6383
Valparaiso University A. G. Huegli, President	Valparaiso, 46383	(219)462-5111 Ext. 374
Wabash College Thaddeus Seymour, President	Crawfordsville, 47933	(317)362-1400

*Denotes a member of the ICUI Board of Directors

APPENDIX A-3

CAMPUS VISITATION SCHEDULE

March 29	--	Butler University
April 2	--	Marian College
April 11	--	Indiana Central College
April 17	--	Wabash College DePauw University
April 18	--	DePauw University Saint Mary-of-the-Woods College
April 19	--	Saint Mary-of-the-Woods College Rose-Hulman Institute of Technology
April 23	--	Taylor University
April 24	--	Saint Francis College Fort Wayne Bible College
April 25	--	Fort Wayne Bible College Indiana Institute of Technology
May 1	--	Ancilla College
May 2	--	Valparaiso University
May 7	--	Franklin College
May 8	--	University of Notre Dame
May 9	--	Saint Mary's College
May 15	--	University of Evansville
May 16	--	University of Evansville
May 29	--	Saint Meinrad College
June 4	--	Saint Joseph's College
June 5	--	Calumet College
June 6	--	Grace College
June 7	--	Huntington College
June 13	--	Manchester College
June 27	--	Holy Cross Junior College
June 28	--	Goshen College
July 11	--	Bethel College
July 12	--	Tri-State College
July 18	--	Northwood Institute
July 23	--	Concordia Senior College
July 25	--	Anderson College
July 31	--	Oakland City College
August 1	--	Marion College
August 8	--	Hanover College
August 13	--	Earlham College

APPENDIX A-4

WORKSHOP SCHEDULE

Host and Date	Attendance Numbers
Taylor University October 8	Anderson College - 11 Huntington College - 7 Manchester College - 5 Marion College - 3 Taylor University - 5
Butler University October 11	Butler University - 10 Earlham College - 6 Franklin College - 3 Hanover College - 7 Indiana Central College - 2
University of Evansville October 16	Northwood Institute - 1 Oakland City College - 7 Saint Meinrad College - 1 University of Evansville - 11
University of Notre Dame October 23	Ancilla College - 1 Bethel College - 2 Goshen College - 7 Holy Cross Junior College - 1 Saint Mary's College - 1 University of Notre Dame - 13
Saint Francis College October 29	Concordia Senior College - 2 Fort Wayne Bible College - 3 Grace College - 0 Indiana Institute of Technology - 2 Saint Francis College - 5 Tri-State College - 0
DePauw University November 5	DePauw University - 15 Marian College - 1 Rose-Hulman Institute - 4 St. Mary-of-the-Woods College - 2 Wabash College - 4
Valparaiso University November 11	Calumet College - 14 Saint Joseph's College - 4 Valparaiso University - 9

APPENDIX A-5

Indiana Higher Education Telecommunication System AND

The Independent Colleges and Universities of Indiana, Inc.

A WORKSHOP IN TELECOMMUNICATIONS

9:00 a.m. -	Registration---Coffee Introductions - W. Neal Robison
9:30 a.m. -	What is IHETS? - Dr. Jane G. Richards
9:45 a.m. -	The IHETS System - James R. Potter
10:15 a.m. -	How Is IHETS Used? - Randall G. Bretz
10:45 a.m. -	The IHETS/ICUI Study - Susan B. Rutledge
11:00 a.m. -	Findings of the Study - W. Neal Robison
11:15 a.m. -	Description of Proposed Systems - David M. Wilson
11:30 a.m. -	Question-and-Answer Session
12:00 noon -	Lunch
1:00 p.m. -	Small-Group Discussions

APPENDIX B

FORMS USED IN DATA COLLECTION

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APPENDIX B-1

LEARNING RESOURCES IN INDEPENDENT
COLLEGES OR UNIVERSITIES

(a study for ICUI conducted by the

INDIANA HIGHER EDUCATION TELECOMMUNICATIONS SYSTEM)

MEDIA ADMINISTRATION -

a. Who has overall responsibility for media facilities and utilization on your campus?

Name_____ Dept_____

Title_____ Address_____

Tel No_____

b. In each of the following learning resources, please indicate the name of the chairman or supervisor of that activity:

Audio-Visual - (motion picture and slide projection, preparation of graphics, etc.)
Chairman/
Supervisor_____ Title_____

Tel No_____

Computer - (academic or research use)
Chairman/
Supervisor_____ Title_____

Tel No_____

Computer - (administrative use)
Chairman/
Supervisor_____ Title_____

Tel No_____

Motion Pictures - (production)
Chairman/
Supervisor_____ Title_____

Tel No_____

Radio - (carrier current or open circuit)
Chairman/
Supervisor_____ Title_____

Tel No_____

Telephone -
Chairman/
Supervisor_____Title_____

Tel No_____

Television - (production of programming)
Chairman/
Supervisor_____Title_____

Tel No_____

Other Media Services - (specify)_____
Chairman/
Supervisor_____Title_____

Tel No_____

ACADEMIC PROGRAMS - If one or more of the following disciplines are taught at your institution, please provide the name, title, address, and telephone number of the person responsible in each category:

Broadcasting, Name_____Title_____

Address_____Tel No_____

Speech, Name_____Title_____

Address_____Tel No_____

Journalism, Name_____Title_____

Address_____Tel No_____

Computer Technology, Name_____Title_____

Address_____Tel No_____

Audio-Visual, Name_____Title_____

Address_____Tel No_____

Communications Technology (E. E., Broadcast Engineering, etc.)

Name_____Title_____

Address_____Tel No_____

ACADEMIC CALENDAR - Please indicate the dates for the following academic terms at your college or university:

Spring, '74_____

Summer, '74_____

Fall, '74_____

COURSE INFORMATION - When returning this questionnaire, if possible, please send with it a copy of your bulletin or course catalog for your college or university.

* * * * * * * * * * * * * * *

RETURN OF QUESTIONNAIRE

1 - Person responsible for filling out questionnaire

Name_____Title_____

Address_____Tel No_____

2 - Please return above questionnaire to:

Indiana Higher Education Telecommunication System (IHETS)
1100 West Michigan Street
Bowers Building
Indianapolis, Indiana 46202

APPENDIX B-2

COMPUTERS

I Contact People -- Administrative - _____

_____

Academic - _____

_____

II Administrative Use --

FACILITY	LOCATION	KINDS OF SOFTWARE
size		

III Academic Use --

FACILITY	LOCATION	KINDS OF SOFTWARE
size		

IV Future Plans -- _____

_____

_____

_____

_____

V Comments -- _____

_____

_____

A. In your estimation, is the hardware at the institution now being used efficiently and effectively?

B. Does your research show pressing equipment needs?

C. Can the IHETS technical system be effectively integrated into their present hardware?

D. Can you justify economic feasibility to intertwist our hardware system with their system?

E. Can you identify areas of system/hardware cooperation with other institutions that are now ongoing?

F. Are there plans for cooperative system/hardware hook-ups?

G. How would adding private college impact present system?

H. Comments

RADIO

I Contact People -- A. Chairman/Supervisor_____

B. Station Manager_____

C. Chief Engineer_____

Staff Size_____

II Facilities -- A. Transmission - Call Letters_____

Frequency_____Power_____

Antenna Height_____

Stereo or Mono_____Hours of Operation_____

(Coverage map if possible)

B. Studio Facilities_____

_____(Stereo?)_____

C. Control Rooms_____

_____(Stereo?)_____

D. Combo Facilities_____

_____(Stereo?)_____

III Future Plans -- _____

_____

_____

_____

IV Comments_____

_____

_____

_____

A. In your estimation, is the hardware at the institution now being used efficiently and effectively?

B. Does your research show pressing equipment needs?

C. Can the IHETS technical system be effectively integrated into their present hardware?

D. Can you justify economic feasibility to intertwist our hardware system with their system?

E. Can you identify areas of system/hardware cooperation with other institutions that are now ongoing?

F. Are there plans for cooperative system/hardware hook-ups?

G. How would adding private college impact present system?

H. Comments

TELEPHONE

I Contact People -- _____

_____

_____

II Facilities -- System Description _____

_____

_____

Number of Stations _____

_____

_____

Cost per station _____

Number of Operator Stations _____

_____

Special Facilities (FX, WATS, etc.) _____

_____

_____

III Future Plans -- _____

_____

_____

_____

_____

IV Comments -- _____

_____

_____

_____

A. In your estimation, is the hardware at the institution now being used efficiently and effectively?

B. Does your research show pressing equipment needs?

C. Can the IHETS technical system be effectively integrated into their present hardware?

D. Can you justify economic feasibility to intertwist our hardware system with their system?

E. Can you identify areas of system/hardware cooperation with other institutions that are now ongoing?

F. Are there plans for cooperative system/hardware hook-ups?

G. How would adding private college impact present system?

H. Comments

TELEVISION

I Contact People -- Chairman/Supervisor_____

Chief Engineer/Technical Coordinator_____

Staff Size_____

II Facilities --

A. Origination - 1. Cameras_____

_____

2. Recorders_____

_____

3. Studios (No. & Size)_____

_____

B. Distribution- 1. RF Systems (No of Rooms)_____

_____

2. Video Systems (No of Rooms)_____

_____

C. Portable Equipment - 1. Cameras & Production Equipment_____

_____

2. (Reel to Reel) VTR's_____

_____

3. Videocassettes_____

_____

D. Monitors - 1. How Many?_____

2. Color or B & W_____

3. Where located?_____
(Roll around or permanent)

E. Terminal Facilities - 1. Location of terminal gear for distribution and/or main equipment racks and test gear_____

_____

2. Test equipment & monitoring available_____

_____

F. Future Plans - _____

_____

_____

III Comments_____

_____

A. In your estimation, is the hardware at the institution now being used efficiently and effectively?

B. Does your research show pressing equipment needs?

C. Can the IHETS technical system be effectively integrated into their present hardware?

D. Can you justify economic feasibility to intertwist our hardware system with their system?

E. Can you identify areas of system/hardware cooperation with other institutions that are now ongoing?

F. Are there plans for cooperative system/hardware hook-ups?

G. How would adding private college impact present system?

H. Comments

PROGRAMMING/SOFTWARE

INSTITUTION_____DATE_____

CONTACT PERSON_____

ADDRESS & PHONE_____

AREA_____

PRESENT PROGRAMS: LOCATION_____

FUTURE PROGRAMS: LOCATION_____

NEEDS:

President - ROBERT E. MARTIN

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President, Indiana Central College, Indianapolis

INDEPENDENT COLLEGES AND UNIVERSITIES OF INDIANA, INC.

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FT. WAYNE
DePAUW UNIVERSITY
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HANOVER COLLEGE
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INDIANA CENTRAL COLLEGE
INDIANAPOLIS
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TECHNOLOGY
FT. WAYNE
MANCHESTER COLLEGE
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MARIAN COLLEGE
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MARION
NORTHWOOD INSTITUTE
OF INDIANA
WEST BADEN
OAKLAND CITY COLLEGE
OAKLAND CITY
ROSE-HULMAN INSTITUTE
TERRE HAUTE
SAINT FRANCIS COLLEGE
FT. WAYNE
SAINT JOSEPH'S COLLEGE
RENSSELAER
SAINT JOSEPH'S CALUMET
COLLEGE
EAST CHICAGO
ST. MARY-OF-THE-WOODS
COLLEGE
ST. MARY-OF-THE-WOODS
SAINT MARY'S COLLEGE
NOTRE DAME
SAINT MEINRAD COLLEGE
SAINT MEINRAD
TAYLOR UNIVERSITY
UPLAND
TRI-STATE COLLEGE
ANGOLA
UNIVERSITY OF EVANSVILLE
EVANSVILLE
UNIVERSITY OF NOTRE DAME
NOTRE DAME
VALPARAISO UNIVERSITY
VALPARAISO
WABASH COLLEGE
CRAWFORDSVILLE

TO: ICUI, Inc. Member Presidents

FROM: Dr. Robert E. Martin

DATE: April 16, 1974

RE: Information for ICUI, Inc. & IHETS Study

As part of the IHETS study, it is necessary to secure information concerning telephone equipment and service now available on your campus. In order to conserve the time of the study personnel, use of grant monies and your campus staff in compiling this information, it is possible to have the phone company serving you to provide us with the information and data needed. However, in order for the telephone company to release this information, it is necessary for you to grant that permission in writing.

Attached to this memo is a release which I would appreciate your signing and returning to me as soon as possible, so we can proceed with this portion of the study.

REM:mrb

Enc.

TO: Dr. Robert E. Martin, President
Independent Colleges & Universities of Indiana, Inc.

On behalf of _____, I do hereby grant permission for members of the IHETS study staff to request information concerning our telephone equipment and service and for the telephone company having such information and data, to release such to the IHETS staff for use in the study. No other use will be made of the information except as it relates to the study and no release of information will be made except through the study and with the approval of the ICUI, Inc. board of directors.

_____
President

_____
Date

President ROBERT E. MARTIN

Board of Directors

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APPENDIX B-4

INDEPENDENT COLLEGES AND UNIVERSITIES OF INDIANA, INC.

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DePAUW UNIVERSITY
GREENCASTLE
EARLHAM COLLEGE
RICHMOND
FORT WAYNE BIBLE COLLEGE
FT. WAYNE
FRANKLIN COLLEGE
FRANKLIN
GOSHEN COLLEGE
GOSHEN
GRACE SEMINARY AND COLLEGE
WINONA LAKE
HANOVER COLLEGE
HANOVER
HUNTINGTON COLLEGE
HUNTINGTON
INDIANA CENTRAL COLLEGE
INDIANAPOLIS
INDIANA INSTITUTE OF
TECHNOLOGY
FT. WAYNE
MANCHESTER COLLEGE
NORTH MANCHESTER
MARIAN COLLEGE
INDIANAPOLIS
MARION COLLEGE
MARION
NORTHWOOD INSTITUTE
OF INDIANA
WEST BADEN
OAKLAND CITY COLLEGE
OAKLAND CITY
ROSE-HULMAN INSTITUTE
TERRE HAUTE
SAINT FRANCIS COLLEGE
FT. WAYNE
SAINT JOSEPH'S COLLEGE
RENSSELAER
SAINT JOSEPH'S CALUMET
COLLEGE
EAST CHICAGO
ST. MARY-OF-THE-WOODS
COLLEGE
ST. MARY-OF-THE-WOODS
SAINT MARY'S COLLEGE
NOTRE DAME
SAINT MEINRAD COLLEGE
SAINT MEINRAD
TAYLOR UNIVERSITY
UPLAND
TRI-STATE COLLEGE
ANGOLA
UNIVERSITY OF EVANSVILLE
EVANSVILLE
UNIVERSITY OF NOTRE DAME
NOTRE DAME
VALPARAISO UNIVERSITY
VALPARAISO
WABASH COLLEGE
CRAWFORDSVILLE

May 16, 1974

Mr. Gail K. Mutchmore
Education Account Manager
Indiana Bell Telephone Company, Inc.
428 North Meridian Street
Indianapolis, IN 46204

Dear Mr. Mutchmore:

You have been requested by IHETS to supply certain telephone oriented information on the Independent Colleges and Universities in Indiana.

We have contacted these institutions and have received their approval for Indiana Bell to act as a representative of the Indiana telephone industry to meet the IHETS request.

The information you will supply IHETS will include only the following items:

1. Type of telephone system.
2. Type of answering position.
3. Number of telephones in service
4. Number of central office trunks.
5. Capacity of the system.

No billing information on local service or toll charges is to be provided.

You will find attached the individual authorization from each institution.

Sincerely yours,

Robert E. Martin
President

REM:mrb
Enc.
cc: ICUI, Inc. members
Mr. Neal Robison,
Director of Study

APPENDIX B-5

RESPONSE TO IHETS/ICUI WORKSHOP

AT_____

NAME_____INSTITUTION_____

DEPARTMENT OR DIVISION_____

CAMPUS ADDRESS_____

CAMPUS PHONE_____

Since the IHETS/ICUI study attempts to identify the telecommunication needs of the Indiana independent colleges and universities, it is most important to have direct input from those faculty members and administrators who are now or may be in the future directly involved with instructional technology. All comments and recommendations will be most welcome.

Are you currently using any of the instructional technologies?

_____ How?_____

_____

Are there plans for future use of instructional technology?_____

_____

_____

If not, do you feel the need for instructional technology in your department?_____

_____

How, specifically, do you think IHETS might best serve you, your department, your college?_____

_____

_____

_____

Are there telecommunication services that you need which IHETS does not provide?_____

_____

_____

_____

Was this workshcp of value to you?_____

ADDITIONAL COMMENTS OR SUGGESTIONS_____

_____

_____

_____

Your cooperation is appreciated.

APPENDIX B-6

PROGRAMMING INFORMATION

IHETS/ICUI STUDY

NAME _____ POSITION _____

INSTITUTION _____

I. Has your institution developed any packaged courseware or mediated instructional materials in any of the following areas of technology? (Please identify the department using the materials and/or the developer of the package, what the package is, and how it has been used.)

A. Television (videotape, live, demonstration, enlargement, micro-teaching, etc.)

_____

_____

_____

_____

_____

B. Audio (radio instructional programs, audiotape, telephone, cassette, etc.)

_____

_____

_____

_____

_____

C. Computer (software packages other than the traditional programs in computer science)

_____

_____

_____

_____

_____

D. Film (self-produced packages, outside-acquired films, etc.)

E. Slide-Tape Strip

F. Other

II. Identify instructional areas at your institution that could benefit from "outside-developed" instructional materials that could be used on your campus.

Are you now investigating the acquisition of any such "outside-produced" instructional materials?

III. A. Is your college or university a member of any groups, partnerships, or consortia that have goals of increasing the instructional excellence of the institutions? What are the groups?

B. Are you investigating membership in any such group?

C. Do you feel there are needs for such groups? _____

IV. Exclusive of consideration of any technical equipment that might be required, would your staff be interested in the preparation of consortia-developed instructional packages and supplemental materials?

ADDITIONAL COMMENTS: _____

A stamped, self-addressed envelope has been enclosed for use in returning this questionnaire; we would like to receive the form by November 5, 1974. We will appreciate your cooperation and your comments.

APPENDIX C

DATA COLLECTED

C-1 TELECOMMUNICATIONS FACILITIES 72

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C-3 DATA ON INDIVIDUAL INSTITUTIONS 78

APPENDIX C-1

TELECOMMUNICATIONS FACILITIES

INSTITUTIONS	RADIO	TELEVISION*	COMPUTER	TELEPHONE
Ancilla Col.	No radio	1/2" VTR--Camera	Use no computer	PBX--59 stations
Anderson Col.	No radio	1/2" VTR's--Cameras-Studio	HP-3000--128k HP-2000--32k	PBX--214 stations
Bethel Col.	No radio	1/2" VTR--Camera	Outside Services (NIFSCO)	PBX--56 stations
Butler Univ.	WAJC-FM (36kw)	3/4"-1/2" VTR's--Cameras	Outside Services (Ind. Univ. & Haag Drugs)	Centrex--125 stat.
Calumet Col.	No radio	1"-1/2" VTR's--Cameras--Studio	Outside Services (St. Joseph's Col.)	Centrex--100 stat.; FX to Chicago
Concordia Sr. Col.	No radio	1/2" VTR's--Cameras-Studio	NCR-400 & Outside Services (Allen Dairy)	PBX--96 stations
DePauw Univ.	WGRE-FM (115w)	1"-1/2" VTR's--Cameras--Studio--CCTV System	PDP-11/45--8k	PBX--419 stations
Earlham Col.	WECI-FM (10w)	3/4"-1/2" VTR's--Cameras--Studio	IBM-1130--16k	PBX--292 stations
Fort Wayne Bible Col.	Carrier Current	1"-1/2" VTR's--Cameras--Studio--CCTV System	Outside Services (NIFSCO)	PBX--104 stations

*Unless noted, all 1/2" VTR's are EIAJ-Type I standard.

TELECOMMUNICATIONS FACILITIES (continued)

INSTITUTION	RADIO	TELEVISION	COMPUTER	TELEPHONE
Franklin Col.	WFCI-FM (10w)	1/2" VTR's (old-format only)--Cameras	PDP-8--16k	PBX--173 stations
Goshen Col.	WGCS-FM (390w) Carrier Current (Audio on CATV)	1/2" VTR's--Cameras	HP-2100A--16k PDP-8L	PBX--225 stations
Grace Col.	No radio	1/2" VTR's--Cameras--Studio	Outside Services (NIFSCO)	PBX--99 stations
Hanover Col.	No radio	1/2" VTR's--Cameras	Outside Services (IVTC-Versailles; Hanover Bank & Trust)	PBX--218 stations
Holy Cross Jr. Col.	No radio	No Television	Use No Computers	Key System--12 stat.
Huntington Col.	No radio	1"-1/2" VTR's--Cameras--Studio--CCTV System	Outside Services (NIFSCO)	PBX--56 stations
Indiana Central Col.	WICR-FM (10w)	1"-1/2" VTR's--Cameras--Studio	Honeywell 2020--32k	Centrex--105 stat.
Ind. Institute of Technology	Carrier Current	1/2" VTR (old format)--Camera	IBM-1130--8k	PBX--48 stations; 2 out-WATS lines
Manchester Col.	WBKE-FM (3kw) Carrier Current	1"-1/2" VTR's--Cameras--Studio--CCTV System	IBM-1130--8k IBM-System 3--8k	PBX--150 stations
Marian Col.	No radio	1/2" VTR's--Cameras	Outside Services	PBX--85 stations

TELECOMMUNICATIONS FACILITIES (continued)

INSTITUTION	RADIO	TELEVISION	COMPUTER	TELEPHONE
Marion Col.	No radio	1"-3/4" VTR's--Camera	Outside Services (NIFSCO ; First Natl. Bank of Marion)	PBX--96 stations
Northwood Inst.	Carrier Current	1/2" VTR--Camera	Outside Services (Datatron of Louisville)	PBX--41 stations
Oakland City Col.	No radio	1/2" VTR--Camera	Use no computers	PBX--52 stations
Rose-Hulman Institute	Carrier Current	3/4"-1/2" VTR's--Cameras	IBM-1130--16k PDP-11/40--32k	PBX--185 stations
St. Francis Col.	No radio	2"-1"-1/2" VTR's--Cameras--Studio--CCTV System	Outside Services (Ind. Inst. of Tech. and Peoples Trust Bank of Ft. Wayne)	PBX--102 stations
St. Joseph's Col.	Carrier Current (on CATV)	No television	GA-18/30--16k	PBX--56 stations
St. Mary-of-the Woods Col.	No radio	1/2" VTR's--Cameras	Outside Services (Ind. State Univ. and Rose-Hulman)	PBX--83 stations 5 out-WATS lines
St. Mary's Col.	No radio	1/2" VTR's--Cameras--Studio--CCTV System	Honeywell 430--64k	Centrex--361 stat.
St. Meinrad Col.	No radio	1/2" VTR's--Cameras	NCR Century 200--32k	PBX--428 stations
Taylor Univ.	No radio	1"-1/2" VTR's--Cameras--Studio--CCTV System	PDP-11/40--32k GA-18/30--16k	PBX--148 stations

TELECOMMUNICATIONS FACILITIES (continued)

INSTITUTION	RADIO	TELEVISION	COMPUTER	TELEPHONE
Tri-State Col.	Carrier Current	1/2" VTR's--Cameras	GA-18/30--16k	PBX--98 stations
U. of Evansville	WEVC-FM (5.7 kw)	1"-3/4"-1/2" VTR's--Cameras--Studio	IBM-370/135--256k	Centrex--180 stat.; 2 out-WATS lines
U. of Notre Dame	WSND-FM (3.4 kw) Carrier Current	1"-3/4"-1/2" VTR's--Cameras--CCTV System	IBM-370/135--1.5 mega-byte	Centrex--1502 stations
Valparaiso Univ.	WVUR-FM (10w)	1"-3/4"-1/2" VTR's -- Cameras--Studio --CCTV System	IBM-1710--40k; Burroughs 1726--100k; PLATO Terminal	Centrex--1575 stat.
Wabash Col.	WNDY-FM (1 kw) (Commercial)	1"-3/4" VTR's--Cameras--Studio	IBM System 3--8k PDP-11/20--28k	PBX--160 stations; FX to Indianapolis

APPENDIX C-2

CATV COMPANIES IN COLLEGE AREAS

COUNTY	INSTITUTION	COMPANY
Elkhart	Goshen Col.	Valley Cablevision Corp. 52580 U. S. 31 N, South Bend, 46637. Under construction.
Grant	Marion Col.	Marion Cable Television Inc. 511 W. Third St., 46952. Parent Co.: Time-Life Broadcast Inc.
Huntington	Huntington Col.	Huntington CATV Inc. 1330 N. Meridian, Indpls. 46202. Parent Co.: Time-Life Broadcast Inc.
Jasper	St. Joseph's Col.	TV Cable of Renssalaer Inc. 309 W. Washington, 47978.
Johnson	Franklin Col.	Telesis Cable TV Co. 1253 Diamond Ave., Evansville 47711.
Kosciusko	Grace Col. and Theological Sem.	Warner Cable of Warsaw. 120 W. Auglaize St., Wapakoneta, Ohio 45895/ Cypress Cable TV, 107 E. Main, Warsaw, Ind. 46580. Parent Co.: Cypress Cable Corp., Los Angeles, Calif.
Lake	Calumet Col.	Colby Cable Corp. of Hammond holds the franchise.
Madison	Anderson Col.	General Electric Cablevision Corp. 633 Jackson St. 46016 Parent Co.: Gen. Elec. Cablevision Corp.
Marshall	Ancilla Col.	Valley Cablevision Corp., Plymouth. 52580 U.S. 31 N, South Bend 46637. Under construction.
Montgomery	Wabash Col.	Crawfordsville Community Cable Corp. 122 S. Washington St. 47933.
Porter	Valparaiso U.	Porter County Cable Co. Box 149, 46383. Under construction.
Putnam	DePauw U.	Putnam All Channel Cable Vision Inc. 109 S. Vine St., Greencastle 46135. Parent Co.: Telesis Corp.

COUNTY	INSTITUTION	COMPANY
St. Joseph	Bethel Col. Holy Cross Jr. Col. St. Mary's Col. U. of Notre Dame	Valley Cablevision Corp. 52580 U. S. 31 N, South Bend, 46637.
Steuben	Tri-State Col.	Liberty TV Cable Inc. Public Square, Angola 46703. Parent Co.: Liberty Communications.
Vigo	Rose-Hulman Inst. St. Mary-of-the-Woods	Indiana Cable Television Inc. 730 Wabash Ave., Terre Haute 47801. Owners: American Television & Communications Corp., Denver.
Wayne	Earlham Col.	Clearview Cable of Richmond. Box 949, 47374. Parent Co.: Plains TV Corp.

COLLEGE AREAS NOT SERVED BY CATV

COUNTY	INSTITUTION
Allen	Concordia Sr. Col. Ft. Wayne Bible Col. Ind. Inst. of Tech. St. Francis Col.
Gibson	Oakland City Col.
Grant	Taylor U.
Jefferson	Hanover Col.
Marion	Butler U. Ind. Central Col. Marian Col.
Orange	Northwood Inst.
Spencer	St. Meinrad Col.
Vanderburgh	U. of Evansville
Wabash	Manchester Col.

APPENDIX C-3

DATA ON INDIVIDUAL INSTITUTIONS

The following material consists of information gleaned during the campus visits and interviews; where possible, the outlines have been extended with data culled from the workshops and programming questionnaires. Immediately following each visit, the data acquired was outlined using the model format presented below, and these standardized outlines have served as the basic points of reference for the material presented in Chapter II as well as for the formulation of the study's recommendations.

Institution_____Type_____'73-'74 Enroll._____

Location_____Area_____

I. People Interviewed

II. Area or Community Services Available

- A. Cable
- B. ITFS
- C. Broadcast Stations
- D. IHETS

III. Hardware Inventory (Present and Planned)

- A. Radio
- B. Television
- C. Computer
- D. Telephone

IV. On-Going Programs (Cooperative--outside acquisitions--internal programming)

- A. Radio
- B. Television
- C. Computer
- D. Telephone

V. Future Programs

VI. Expressed Needs

VII. Reactions from Visit

ANCILLA COLLEGE — Two-Year Liberal Arts '73-'74 Enr: 143
Donaldson — North Central Indiana

I. PEOPLE INTERVIEWED
- A. Sister Joel Lampen, President
- B. Mr. John Shields, Director of Development
- C. Sister Mary Leonard Skevington, Librarian

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Donaldson is within the South Bend television market.
- B. There are no CATV or ITFS services in the area.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television
  1. A master antenna on top of the main building helps pull in television signals which can be recorded on the school's EIAJ-Type 1 1/2-inch videotape recorder.
  2. The school also owns one vidicon camera and two monitors (one black and white, one color).
- C. Computer: There are no computer facilities.
- D. Telephone: Ancilla is in United Telephone territory.
  1. The North Electric 561 PBX is presently equipped with 90 lines and three trunks, of which 59 stations and all three trunks are now in use.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: No radio programming is practiced.
- B. Television equipment has been used in speech and English classes; the school does not rent video programs.
- C. Computer services are not used at present.

V. FUTURE PROGRAMS
- A. Ancilla may possibly acquire a computer terminal for use in an elementary computer course.
- B. The school would be interested in the acquisition of outside produced programming for its videotape recorder; history, government, psychology, literature, mathematics, biology, and education are open to introductory course materials if the price for rental use is not prohibitive.

VI. EXPRESSED NEEDS
- A. A number of needs are felt in the area of television:
  1. an in-service development program for faculty members would be helpful.
  2. also needed is a central tape-recording facility to provide tape library resources.
- B. The school particularly needs an in-state WATS- or SUVON-type service to reduce its long-distance telephone rates.

VII. REACTIONS FROM VISIT

A. Contact personnel were interested in IHETS and very pleased to be included in the study.

B. The school is quite small and isolated, but because of that isolation they have a great need for outside resources; they would make a conscientious effort to use anything IHETS could supply.

ANDERSON COLLEGE — Liberal Arts — '73-'74 Enr: 1661
Anderson — East Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Lowell Davidson, Technical Director of Theater
- B. Mr. Thomas Harbron, Director of Computing Center
- C. Dr. Duane C. Hoak, Dean of the Faculty
- D. Ms. Darlene Miller, Dir. of Instructional Materials Center
- E. Mr. Robert Smith, Department of Speech
- F. Ms. Grace Suko, Instructional Materials Center
- G. Mr. Charles Whittom, Director of Business Services

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Anderson is served by General Electric Cablevision Corp., which has full-color facilities of its own.
- B. The system carries predominantly Indianapolis stations.

III. HARDWARE INVENTORY
- A. Radio plans are to have in operation a carrier-current Am station and an FM station on CATV by sometime in 1975; the school is currently acquiring equipment and a control room for the station.
- B. Television
  1. The college's television equipment includes a three-camera portable production system and studio as well as two video-tape recorders (1/2-inch EIAJ-Type I) with editing capability, switcher, and special effects.
  2. There are numerous CATV drops in all campus buildings, and the college has an origination to the cable system head end.
- C. Computer: Anderson has two major computing facilities, both operating on time-sharing mode.
  1. An HP-3000 with 128K byte virtual memory is used with a variety of languages for both academic and administrative computing.
  2. An HP-2000 with 32K memory operating in BASIC provides a supplementary computing resource.
  3. In addition, there are 32 dial-up ports and 27 terminals on campus.
- D. Telephone: Anderson is in Indiana Bell territory.
  1. Anderson's PBX-701 has 214 stations.
  2. The school has designated rooms on campus equipped with jacks to accept its telelecture units.
  3. WATS has been used for limited time periods for special purposes such as recruiting.

IV. ON-GOING PROGRAMS
- A. Radio programming is presently being developed for the new station.
- B. Television
  1. Anderson offers a broadcasting minor which officials hope to make a major in the near future.

2. Equipment is used primarily in broadcast education.
3. Anderson is an Associate Member of NETCHE and is actively using its instructional video materials.
4. The college is building a library of community-oriented videotapes, including several by political leaders.

C. Computer
1. The college has two possible major areas in computer science (business and mathematics).
2. All administrative computing is handled on the college's facilities, and they are actively attempting to acquire outside users.

D. Telephone
1. The telephone is used heavily in recruiting.
2. The average monthly bill for long-distance calling is $1,574.

V. FUTURE PROGRAMS
A. Anderson plans interinstitutional cooperation in computers.
B. The college also plans to do audio programming for the CATV channel and possibly for television as well; they hope eventually to have their own channel on the system.

VI. EXPRESSED NEEDS
A. Radio programming is a high-priority need.
B. A need is also felt for television and computer software.

VII. REACTIONS FROM VISIT
A. Anderson has a well-equipped campus with staff knowledgeable about telecommunications.
B. The college is attempting to do more in the area of community service.

BETHEL COLLEGE — Liberal Arts — '73-'74 Enr: 438
Mishawaka — North Central Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Albert J. Beutler, President
- B. Dr. Wayne Gerber, Academic Dean

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The head end of the Mishawaka cable system is connected to the South Bend system, which carries IHETS Video Network programming on mid-band.
- B. Mishawaka is also within broadcast range of WNIT-Elkhart.

III. HARDWARE INVENTORY
- A. Radio: no facilities were reported.
- B. Television
  1. The Athletics Department has one vidicon camera, one monitor, and one 1/2-inch EIAJ-Type I videotape recorder.
  2. There is a CATV drop in the Science Building.
- C. Computer: Bethel uses the services of NIFSCO in Marion for administrative computing.
- D. Telephone: Mishawaka is in Indiana Bell territory.
  1. The PBX-740 has a capacity of 200 stations, of which 56 are currently in use
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: there is no radio programming.
- B. Television equipment is used in education and physical education classes.
- C. Computer: students go to IUSB for classes in Computer Science.
- D. Telephone is used heavily in recruitment, especially in Michigan, Ohio, Illinois, and southern Indiana.

V. FUTURE PROGRAMS
- A. The college is considering involvement with radio.
- B. The staff also plans to install a television distribution system on campus.

VI. EXPRESSED NEEDS
- A. A major need is for reduced long-distance telephone costs.
- B. Another need is felt for greater computing capability: they would like to be able to do more administrative work closer to campus, and they would also like to teach computer science on campus and to experiment with CAI programs.

VII. REACTIONS FROM VISIT
- A. Bethel is a member of the Northern Indiana Consortium of Education (NICE)
- B. The college staff has been investigating some of the services which IHETS offers.

BUTLER UNIVERSITY — University — '73-'74 Enr: 4443
Indianapolis — Central Indiana

I. PEOPLE INTERVIEWED
   A. During Campus Visits
      1. Mr. Raymond E. Cawthorne, Registrar
      2. Mr. Raymond Gladden, Treasurer-Controller
      3. Mrs. Ann C. Harper, Assistant Professor of Radio-Television
      4. Dr. Alexander E. Jones, President
      5. Dr. Henriette Kaplan, Associate Professor of Education
      6. Mr. James Phillippe, Chairman, Radio-Television Department
   B. Also interviewed by telephone were Dr. Thomas Malone and Dr. Nielsen, both members of the Computer Search Committee.

II. AREA OR COMMUNITY SERVICES AVAILABLE
   A. Indianapolis is not served by CATV but has three commercial television stations presenting programming of the three major networks, one independent television station, and one public television station as well as a number of educational and commercial radio stations.
   B. There is an ITFS in Indianapolis (WAT 21).

III. HARDWARE INVENTORY
   A. Radio: The University station is WAJC-FM at 104.5 mhz.
      1. The 36kw station has one studio and one combination control room/studio.
      2. There is one classroom radio control room with a connecting classroom used by broadcast education students.
   B. Television: an unspecified number of 1/2-inch videotape machines and 3/4-inch videocassette machines are reported in use by the Education Department, the Radio-Television Department, and the School of Pharmacy.
   C. Computer: Butler has bought a data communication line to the I.U. Computer through the IHETS Telpak System for its academic and administrative computing.
   D. Telephone: Indianapolis is in Indiana Bell territory.
      1. The Centrex I-701 has 125 stations in use.
      2. There are no special facilities.

IV. ON-GOING PROGRAMS
   A. Radio
      1. The station is on the air from 11:00 a.m. to 1:00 a.m. daily throughout the year.
      2. It is affiliated with the Indiana Broadcasters Association (IBA) and the Mutual Radio Network; it has UPI wire service.
         a. The station has carried the Metropolitan Opera broadcasts and has used programming from the University of Texas.
         b. It has also shared programs with other educational radio stations in the area.

c. The station tapes one or two courses each fall for broadcast on "Classroom Mike"; courses taped to date are Marriage and the Family, American Negro History, State and Local Government, Drug Abuse, and Criminology.

3. Butler has also a number of audiotapes which have been used in the classroom:
   a. the Education Department has about two dozen tapes on a variety of topics;
   b. the School of Pharmacy serves as the Indiana agent for the University of Wisconsin cassette courses in continuing education, with tapes covering various areas of pharmacy and pharmacology;
   c. the History Department has cassette lectures on twentieth-century American music;
   d. the Department of Modern Foreign Languages uses tapes and cassettes extensively;
   e. the English Department has developed tapes for drama courses.

B. Television
   1. The Radio-Television Department's videotape recorder is used occasionally with production classes, but most broadcast education work in television is done at the facilities of WFYI-Channel 20.
   2. Several other departments report instructional materials on videotape:
      a. Education has six videotapes of teaching processes and twelve of the behavior of mentally retarded and emotionally disturbed children;
      b. Pharmacy has six videotapes used to introduce various laboratory assignments; and
      c. History holds four videotapes on African History.

C. Computer
   1. Because the computer installation has just begun operation. Chemistry is the only department reporting software development, although Psychology and Zoology intend to work on such materials.
   2. The Mathematics Department plans to offer two computer science courses in Spring 1975, and faculty are developing six more courses.

V. FUTURE PROGRAMS

The Holcomb Institute is searching for computer programs for environmental modeling.

VI. EXPRESSED NEEDS

A. The radio station would like to operate in stereo; it needs bulk-purchasing discounts and programming from outside sources.

B. A number of needs were reported in the area of television:
   1. The University would like to improve its production capability.
   2. The School of Pharmacy would like to receive the programming

of the Medical Education Resources Program carried on the IHETS Video Network.

3. The Departments of Botany and Zoology would like to have a live Video Network hook-up to facilitate seminars for scientists and students on a statewide basis.

C. Computer software development is needed.

D. Telephone savings are needed.

VII. REACTIONS FROM VISIT

A. Until quite recently, both the University and the Radio-Television Department have been heavily radio-oriented; thus, television facilities and programming are less than one might expect of an institution which offers as much as Butler does. Steps are being taken, however, to correct the imbalance.

B. Both faculty and administration have evidenced a great deal of interest in the possibilities opened through IHETS.

CALUMET COLLEGE — Liberal Arts — '73-'74 Enr: 1661
East Chicago — Northwest Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Lillian Bell, Associate Professor of Journalism
- B. Sister Cecilianne Broton, A-V Coordinator
- C. Mr. Robert Donnelly, Chairman, Division of Communication and Fine Arts
- D. Father William Eilerman, Vice-President for Finance
- E. Dr. Ray J. Krajewski, Vice-President for Academic Affairs
- F. Brother Robert Kreutzer, Andersen Communication Center
- G. Father Joseph Rodak, Director, Andersen Communication Center

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. East Chicago is in the Chicago television market; it also receives WCAE-Channel 50 programming from St. John, Indiana.
- B. There is no CATV in the area.
- C. Also, an IHETS Video Network connection and ITFS are located at WCAE.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television
  1. Calumet has one film chain, three vidicon cameras, and one portable television production/control unit.
  2. Also available are a variety of 1/2-inch EIAJ-Type I videotape machines.
  3. The College will shortly have installed two IVC 500A cameras and two IVC tape machines (870 and 825A) with TRl editor as well as a videocassette machine with lighting and audio packages.
- C. Computer: Calumet has no computer facilities of its own.
- D. Telephone: The College is in Illinois Bell territory.
  1. The Centrex has 100 stations.
  2. The College also has an FX line to Chicago.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported.
- B. Television
  1. Andersen Communication Center personnel are in the process of building a library of instructional materials.
  2. The Andersen Center has produced videotapes on "Interviewing Techniques for Case Workers in Social Welfare" and in the techniques of survey research.
  3. Center personnel have also worked with the Calumet faculty, especially in the areas of sociology and Spanish.
  4. There is active cooperation with public TV station WCAE, and the College produces two series for the station--"Conozca Su Comunidad" and "Northwest Review."
  5. Several television production courses are offered, and the Center's primary use is for student training.
- C. Computer: Administrative computing jobs are sent to Saint Joseph's College.

V. FUTURE PROGRAMS

A. In September of 1975, Calumet College plans to move to its new campus, where a new Communication Center is being developed.

B. The College has a Title VI grant for color television equipment and a campus distribution system, and they have also received some private grants for the facility; it is being designed with production of tapes for WCAE in mind.

C. Administrators are investigating a privately-owned telephone system for the new campus.

D. Media courses are being planned to advance the Black Journalism program, and the College is also developing programs in an open-learning concept for prisons.

VI. EXPRESSED NEEDS

A. Community-service programming constitutes one need.

B. Also needed is courseware to enrich the curriculum, and the areas of English, management, science, and social science are all investigating the acquisition of outside-produced instructional materials.

C. The College needs cost-savings in long-distance telephone costs.

VII. REACTIONS FROM VISIT

A. A small regional consortium of post-secondary institutions is looking into sharing computer resources. (Members are Calumet College, IU-North West, IVTC, PU-Calumet, and Valparaiso.)

B. The College is deeply involved in its community and offers programs for Spanish-speaking peoples, Blacks, urban-dwellers, and special interest groups.

C. There is also extensive involvement with mass media and communications, and the Speech and Journalism Departments are developing strong academic programs to meet the needs of the population they serve.

D. Calumet's faculty offers a valuable resource in the areas of mass communications and the problems of minorities and urbanites.

CONCORDIA SENIOR COLLEGE — Upper-Division — '73-'74 Enr: 473
Fort Wayne — Liberal Arts — Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Herbert Bredemeier, President
- B. Mr. Paul W. F. Harms, Professor of Speech
- C. Mr. David Ludwig, Director of Institutional Studies
- D. Dr. Edgar Walz, Dean of Administration

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The College is in the Fort Wayne television market; there is neither cable nor ITFS in the area, but there is a public television station repeating from Bowling Green, Ohio.
- B. There is an IHETS Video Network drop at IUPU-Fort Wayne.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television
  1. The College has a two-camera black-and-white production package with switcher and two 1/2-inch EIAJ-Type I videotape recorders.
  2. There is also one studio with control room.
- C. Computer
  1. The NCR 400 is used for administrative computing.
  2. Academic computing is done on cards and sent out to the Allen Dairy and IUPU-Fort Wayne.
- D. Telephone: Fort Wayne is in General Telephone territory.
  1. The PBX-L80 has a capacity of 20 trunks and 80 lines; 5 trunks and 96 stations are in use.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported.
- B. Television
  1. Equipment is used for speech, drama, and athletics.
  2. The College has also used equipment for Social Science courses and to televise some community church services.
  3. One television production course is taught, and the College has produced programming for local television.
- C. Computer: One course in computer programming is offered.

V. FUTURE PROGRAMS
The College supplies nurses for Lutheran Hospital, and it is attempting to develop its program in nursing education; staff would be interested in sharing with other institutions having nursing programs.

VI. EXPRESSED NEEDS
- A. The College needs terminals to get into time-sharing, as punch cards are not desirable for classes.
- B. They are also very interested in videotape courseware, but so far costs have been prohibitive.

VII. REACTIONS FROM VISIT

A. Staff reacted positively to the possibilities of computer and telephone cooperation and savings.

B. They were also interested in television, particularly in supplementary and cultural programming.

DEPAUW UNIVERSITY — Liberal Arts — '73-'74 Enr: 2344
Greencastle — West Central Indiana

I. PEOPLE INTERVIEWED
- A. Dr. John Anderson, Director of Graduate Studies
- B. Dr. Robert H. Farber, Vice-President and Dean of the University
- C. Dr. William Kerstetter, President
- D. Dr. Ned MacPhail, Chairman, Department of Education
- E. Mr. James Martindale, Head Librarian
- F. Dr. Carl Singer, Director of the Computer Center
- G. Mr. Dan Smith, Circulation and Periodicals Librarian
- H. Mr. Deward Smythe, former Comptroller
- I. Dr. Robert Weiss, Chairman, Speech Department

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Greencastle is served by Putnam All Channel Cable Vision, Inc., which brings in stations from Terre Haute and Indianapolis; it also carries WTIU from Bloomington.
- B. There are no broadcast television stations in the area; there is one commercial broadcast radio station.

III. HARDWARE INVENTORY
- A. Radio: The University station is WGRE-FM, 91.5 mhz.
  1. The 115-watt station has a coverage radius of 15-20 miles.
  2. It is a two-studio operation (one on-air and one recording) with two control rooms located in the Student Union Building.
- B. Television: The University has a television distribution system (both send and receive) among three buildings.
  1. Equipment consists of portable 1/2-inch EIAJ-Type I videotape recorders and a portable production facility, all in black and white; there is also one-inch VTR equipment and 3/4-inch videocassette units.
  2. A complex, sophisticated television production studio which would add color capability and two-inch videotape machines has been proposed.
- C. Computer: The University's Computer Center is located in the new Science Building.
  1. There is a PDP 11/45 computer operating in a time-sharing environment with BASIC.
  2. The computer has a recently-enlarged memory facility.
- D. Telephone: Telephone facilities are located in the Administration Building; Greencastle is part of the General Telephone system.
  1. The PBX-AE 75 is handled by two operators and is equipped with 300 lines; there are 419 telephones in service.
  2. The University has no WATS or FX.

IV. ON-GOING PROGRAMS
- A. Radio
  1. The station is student-run and is involved in no cooperative ventures.

2. Programming consists primarily of music and news:
   a. the station gives heavy local news coverage, supplemented by AP wire service;
   b. some student functions are covered;
   c. a small amount of public-service programming is acquired from outside sources.

B. Television
1. Primary control and usage of television facilities are by the Department of Education; broadcast students use the facilities of WTHI-Channel 10 in Terre Haute.
2. University use of television is for micro-teaching and teacher education projects, speech classes, athletics, business class presentations, and a course dealing with use of television in the classroom.
3. There is a special non-portable system in the Science Building for laboratory demonstrations.

C. Computer
1. Computer facilities are used for both academic and administrative functions.
2. Approximately 200 students are enrolled in computer science courses, and a number of academic departments (including German, Economics, Physics, and Political Science) use the computer.

V. FUTURE PROGRAMS
A. Radio station WGRE hopes to be on the air year-round; it also wants to add stereo capability and boost its power.
B. Future plans for television depend on the hardware proposal mentioned above.
C. There is a possibility of media involvement in the new Performing Arts Center.
D. DePauw is a member of the Collegiate Consortium of Western Indiana, which has announced plans for sharing of communications resources among its members.
E. Currently under examination is a cooperative effort among DePauw, Rose-Hulman Institute, and Wabash College for the exchange of ideas and information via a computer interconnection.
F. The library has been investigating a hook-up with other libraries at independent institutions in the State.

VI. EXPRESSED NEEDS
A. Several needs are felt at the radio station:
   1. to upgrade some of the equipment,
   2. to have a regular radio budget (and increased funding),
   3. to be able to offer higher wages to student employees,
   4. to obtain outside instructional programming, and
   5. to have more news-gathering sources.
B. An on-campus television production studio is needed as well as pre-recorded instructional programming for classroom use.

C. Needs are not well-defined in the computer area because of the newness of the facility, but personnel feel a general need for more software and more student programs.
D. Telephone needs are for lower costs and greater flexibility.

VII. REACTIONS FROM VISIT
A. Three areas' needs seem particularly important:
1. improved telephone service at lower cost;
2. programming for the proposed television facility;
3. news for the radio station.
B. There was some indication of interest in a computer network.
C. All contact personnel were most positive about IHETS and about interinstitutional cooperation in general; people were knowledgeable about IHETS and what could come from statewide cooperative efforts; they were interested in pursuing cooperation and have already looked into such ventures on their own.

EARLHAM COLLEGE — Liberal Arts — '73-'74 Enr: 1285
Richmond — East Central Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Howard Alexander, Professor of Mathematics
- B. Dr. Joe E. Elmore, Dean of the College
- C. Mr. Evan Farber, Head Librarian
- D. Mr. Hugh N. Ronald, Vice-President for Business Affairs
- E. Mr. John Schuerman, Director of Audio-Visual Center
- F. Dr. Franklin W. Wallin, President
- G. Mr. Thomas Wenrick, Director of Computers

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Richmond is served by Clearview Cable of Richmond, which has mid-band capability.
- B. It is hoped that there will be an IHETS Video Network drop at IU-East in the not-too-distant future.

III. HARDWARE INVENTORY
- A. Radio
  1. Station WECI-FM is a student-run operation at 91.5 mhz.
  2. There is one combination control area, one studio, and one announce booth; equipment is monophonic.
- B. Television
  1. Most equipment is 1/2-inch EIAJ-Type I, although the College also has 3/4-inch videocassette equipment.
  2. One vidicon camera and one color monitor are available with special effects and switcher and 1/2-inch editing capability.
  3. Local CATV can be received in all rooms on campus, and there is CATV origination capability from all academic buildings.
- C. Computer: Earlham has an IBM-1130 with 16k memory operating in batch, predominantly in FORTRAN.
- D. Telephone: Richmond is in General Telephone territory.
  1. The College's PBX (ITT 400G) is equipped with 250 lines and has 292 stations in service.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio
  1. Programming is primarily music, about half classical and half rock.
  2. WECI has UPI service and also gets some tapes from NPR.
- B. Television
  1. Equipment is used in performance assessment.
  2. The College is developing some videocassettes as supplementary materials on East Asia, particularly Japan.
- C. Computer
  1. All administrative computing is done on the IBM-1130.
  2. The computer is also used in teaching computer programming and as a supplement to other courses.

3. The College has a program it names "Datacall," which is a computer simulation of research problems, used in game format to teach research design skills.

D. Telephone
1. Long-distance toll charges average about $2000 per month.
2. The College does a good deal of in-state long-distance calling.

V. FUTURE PROGRAMS
A. The radio station has been donated a three-kilowatt transmitter, and they may get a new tower to go with it.
B. Television plans include setting up television classrooms in each building.
C. The computer is inadequate to current needs, so college personnel are actively involved in examining both use of outside sources and the possibility of acquiring a new facility.

VI. EXPRESSED NEEDS
A. The College needs reduced long-distance calling costs.
B. WECI needs Group W news or some type of actualities service.
C. Faculty would like to get televised courseware, particularly in East Asian Studies.
D. They need a larger, faster computing facility with interactive capability.

VII. REACTIONS FROM VISIT
A. Computer personnel would like to retire the IBM-1130 unless it can be used as an entry to a data network.
B. A telephone service such as SUVON would be very valuable to them in interlibrary loan as well as from a financial standpoint.
C. President Wallin is very knowledgeable about telecommunications and is especially interested in computers and in public broadcasting.
D. The Head Librarian, Mr. Farber, is President of the Indiana Library Association and is interested in electronic media.

FORT WAYNE BIBLE COLLEGE — Liberal Arts/ Christian Education — '73-'74 Enr: 540
Fort Wayne — Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Charles Belknap, Director of Admissions
- B. Mr. Donald E. Guhse, Business Manager
- C. Mr. Jay Platte, Acting Chairman, Department of Music
- D. Dr. Timothy M. Warner, President
- E. Mr. Wesley R. Willis, Academic Dean

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The College is in the Fort Wayne television market; there is neither CATV nor ITFS in the city, but there is a public television station repeating from Bowling Green, Ohio.
- B. There is an IHETS Video Network drop at IUPU-Fort Wayne.

III. HARDWARE INVENTORY
- A. Radio: The College has a campus carrier-current station with one large studio and a control room.
- B. Television: In the Administration Building there is a distribution system covering seven classrooms with both origination and reception capability.
  1. Production facilities consist of a control room, two switchers, and four vidicon cameras.
  2. Additional equipment includes one one-inch videotape machine and several 1/2-inch EIAJ-Type I videotape machines.
  3. There is also an intercom system.
- C. Computer: There are no facilities.
- D. Telephone: Fort Wayne is in General Telephone territory.
  1. The College's PABX (AE 320) is equipped with 100 lines and has 104 stations in service.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio
  1. Due to some technical problems, the radio station operates on a very limited basis.
  2. It is used primarily as a recording facility for instructional purposes.
- B. Television: Facilities are used for freshman speech classes, micro-teaching, and self-assessment, especially in missions classes.
- C. Computer: Computational needs are primarily administrative and are taken to the Northern Indiana Financial Services Company (NIFSCO) in Marion.
- D. Telephone: Long-distance bills run between $150 and $300 per month.

V. FUTURE PROGRAMS
- A. Radio
  1. The College has received approval from the FCC to begin

construction of a 50,000-watt broadcast educational FM radio station; when completed, the station will be the most powerful in the independent sector.

2. They anticipate housing the studio in the Administration Building and would microwave to a leased tower on the outskirts of Fort Wayne.

B. Television: The College has a number of plans to improve its television facilities and services:
   1. to wire additional rooms for viewing and/or origination;
   2. to build a tape library;
   3. to continue to purchase quantities of videotape;
   4. to obtain funding for more portable TV equipment.

C. The College also has far-ranging plans for a Communications Center.

VI. EXPRESSED NEEDS

A. There is a strongly-felt need for bulk-purchasing savings on videotape.

B. The College has met with Saint Francis College and IUPU-Fort Wayne about getting outside computing services; they feel that networking would be desirable and have expressed interest in sharing resources.

C. Telephone cost reductions are greatly needed.

VII. REACTIONS FROM VISIT

A. The College is fairly well equipped with television hardware, so most of their needs are for software.

B. A WATS-type service would be valuable to them.

FRANKLIN COLLEGE — Liberal Arts — '73-'74 Enr: 637
Franklin — Central Indiana

I. PEOPLE INTERVIEWED
- A. Ms. Dagrun Bennett, Director of the Computing Center
- B. Mr. John Chiarotti, Vice-President for Financial Affairs
- C. Dr. Raymond Cowan, Professor of Physics and Director of WFCI
- D. Mr. David E. Maharry, Registrar
- E. Dr. Richard M. Park, Dean and Provost
- F. Mr. Vicco von Stralendorff, Associate Librarian

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The town is served by Telesis Cable Company, which brings in the Indianapolis broadcast stations as well as WTIU; however, there are no cable drops to the College.
- B. There is neither ITFS nor an IHETS drop in the area.

III. HARDWARE INVENTORY
- A. Radio: The College's station is WFCI at 89.3 mhz.
  1. The ten-watt station has a coverage radius of about ten miles.
  2. The two studios and two control rooms are all housed in the basement of Clein Hall.
- B. Television: The Athletic Department has two 1/2-inch EIAJ-Type I videotape machines.
- C. Computer
  1. The College has a PDP-8 with 16k memory.
  2. It also has a terminal accessing the IUPUI computer for the G.E. computer network.
- D. Telephone: Franklin is in United Telephone territory.
  1. Its PBX (North Electric 561) has a capacity of 270 stations and 35 trunks; it is presently equipped with 120 lines and 10 trunks, with 173 stations and nine trunks in use.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: WFCI is on the air from noon until 1:00 a.m. throughout the academic year.
  1. Programming is about 1/3 fine arts (classical music and tapes) and 2/3 entertainment (rock music).
  2. A few of the tapes are from outside sources such as the BBC and CBC, but there is no wire service.
  3. The station is entirely a student activity and is not used for instruction.
- B. Television equipment is used by the Athletic Department.
- C. Computer: Use is primarily for administrative programming, although there is some student use.
- D. Telephone: Partly because of heavy admissions and athletics use, telephone bills run about $1250 per month for PBX and about $1093 per month for long-distance calling.

V. FUTURE PROGRAMS

Radio plans include gradual replacement of outdated equipment.

VI. EXPRESSED NEEDS

A. The Director of WFCI expressed two major needs for radio:
   1. more and better-quality programming (perhaps through a radio network), and
   2. a stronger tie with the new journalism program.

B. The major concern expressed in the area of television was that there is no hook-up with the cable system.

C. A videotape cataloguing service would be extremely useful.

D. Needs are felt for occasional access to a larger computer system and for information about software and system utilization.

E. There is a great need for cheaper long-distance calling rates and better service.

VII. REACTIONS FROM VISIT

A. Two areas were noted as offering possibilities for future use of television and radio: the recently-funded, expanded journalism program and the career-oriented medical program.

B. On a recent visit to Franklin College, members of the National Council for Accreditation of Teacher Education (NCATE) noted a great need for more and better use of instructional technology and hardware.

C. Franklin is a member of the Consortium for Urban Education (CUE).

GOSHEN COLLEGE — Liberal Arts — '73-'74 Enr: 1243
Goshen — North Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. William F. Miller, Assistant Professor of Physical Science
- B. Mr. Dana Sherman, Controller
- C. Mr. Fred Steiner, Development
- D. Mr. J. F. Swartzendruber, Director of Instructional Materials Center
- E. Mr. Roy Umble, Chairman, Department of Communication
- F. Dr. Henry D. Weaver, Provost
- G. Dr. Orville Yoder, Associate Dean of the College

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Goshen's CATV system is connected via microwave with South Bend Valley Cable, which carries IHETS programming on mid-band; however, there is no cable drop on campus.
- B. Goshen is also within broadcast range of WNIT (South Bend/Elkhart public television).

III. HARDWARE INVENTORY
- A. Radio
  1. WGCS-FM at 91.1 mhz is audio on the CATV system and broadcasts at 390w power over a thirty-mile coverage area; there is also a carrier-current station in operation.
  2. The station has one studio and one combination studio/control room.
- B. Television equipment consists of three 1/2-inch EIAJ-Type I videotape recorders, three vidicon cameras, and one portapack.
- C. Computer
  1. The College has an HP-2100A with 16k memory and two teletype terminals operating on BASIC.
  2. There is a PDP-8L in the Physics Department for laboratory work.
  3. Payroll and registration computing are done with outside vendors: payroll with First National Bank, and registration with NIFSCO.
- D. Telephone: Goshen is in General Telephone territory.
  1. The PABX-AE320 has 225 stations and is presently equipped with 200 lines and 13 trunks.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: both stations are student-run.
  1. The carrier-current station carries primarily rock music.
  2. The FM station has strong programming in classical music; it also carries some religious programming and local sports and has UPI news wire.
- B. Television
  1. The College's equipment is used primarily for

micro-teaching, speech, and physical education skills.

2. The College has a committee on cablevision exploring the possibility of doing programming for the public access channel of the CATV system.

C. Computer: computer facilities are used to teach computer science and for applications programming (as a tool for other disciplines).

D. Telephone: The College makes a number of out-of-country calls to missions, and long-distance bills average $1000 per month.

V. FUTURE PROGRAMS

A. The nursing education staff plans to do more with instructional video materials.

B. Goshen will be getting a cable drop on campus in the near future.

C. Radio plans include developing a tape news service for Mennonite schools and supplying area radio stations with public service announcements about Mennonite Christian education.

VI. EXPRESSED NEEDS

A. Goshen needs a larger-capacity, faster computer system.

B. The radio station staff is interested in a radio network, especially for news actualities.

C. Administrators would like to explore library sharing and academic communication; they are also interested in applying the concept of an open university to a middle school which would bridge the gap between high school and college.

D. Because of their heavy use of the telephone in recruiting, they need cost savings in long-distance telephone bills.

VII. REACTIONS FROM VISIT

A. The College seems interested in IHETS and its services, and they would seem to benefit from an association with IHETS, particularly in the areas of telephone, radio, and television.

B. Broadcasting is important to them; they realize its value from their mission work, but they haven't been able to develop as fully as they would like in this area.

GRACE COLLEGE AND THEOLOGICAL SEMINARY '73-'74 Enr: 995
Winona Lake North Central Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Paul Fink, Professor of Homiletics
- B. Dr. E. William Male, Professor of Philosophy
- C. Mr. Robert Ross, Assistant to the Business Manager
- D. Mr. Terry White, Chairman, Department of Journalism
- E. Dr. Vance A. Yoder, Academic Dean
- F. Mr. Mervin Ziegler, Associate Professor of Speech

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Warner Cable of Warsaw serves Winona Lake and carries stations from South Bend and Fort Wayne.
- B. The cable company has offered the College use of a channel on the system.

III. HARDWARE INVENTORY
- A. Radio: No radio facilities were reported.
- B. Television: The College has two speech recording facilities, each composed of a small control room and associated studio.
  1. One facility has a small black-and-white production system utilizing two vidicon cameras and 1/2-inch EIAJ-Type I videotape recorders.
  2. The other facility is equipped with a single vidicon camera and one 1/2-inch EIAJ-Type I videotape machine.
- C. Computer
  1. Most computing jobs are sent to NIFSCO in Marion.
  2. The College also uses the computer facilities at the local high school.
- D. Telephone: Winona Lake is in United Telephone territory.
  1. The PBX (North Electric 561) is presently equipped with 90 lines and seven trunks; 99 stations are used.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: The College offers a course in the fundamentals of radio and television.
- B. Television
  1. Television facilities are used primarily for ministries and homiletics.
  2. The College has produced some videotapes for journalism, has recorded some chapel services, and has done some work with the cable system.
  3. The College offers a course in educational television.
- C. Computer
  1. The local high school's computer is used for a basic introductory computer science course.
  2. Registration and financial data are computed at NIFSCO.
- D. Telephone: The College spends about $1000 per month on its PBX alone and another $50 per month on long-distance calling.

V. FUTURE PROGRAMS

The College would like to add a course in computer programming in the near future.

VI. EXPRESSED NEEDS

A. A primary need is for computing facilities.

B. The College also needs software, especially in credit courses in Speech Science and some other academic areas where resources are limited.

C. Personnel feel the need for a radio station, although they feel it is unlikely to come about.

VII. REACTIONS FROM VISIT

A. The College has a strong program using television in homiletics.

B. Some dissatisfaction was expressed with the services at NIFSCO; also some concern was expressed about how long the program using the computer at the high school may last, as they are dependent on that local teacher's staying at the high school and have no computer science teacher on their own faculty.

C. The Board recently voted not to pursue CATV opportunities, but the College does use CATV departmentally as a teaching tool.

HANOVER COLLEGE — Liberal Arts — '73-'74 Enr: 975
Hanover — Southeastern Indiana

I. PERSON INTERVIEWED--Dr. John E. Horner, President

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The town is in the Louisville television market, including WKPC, the educational station there; there is also an AM radio station in Hanover.
- B. There is neither CATV nor ITFS in the Hanover/Madison area.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television: The College has 1/2-inch EIAJ-Type I videotape recorders, vidicon cameras, and monitors.
- C. Computer: All computing work is done externally.
  1. The College has a dial-up terminal connected to the Purdue computer.
  2. Administrative computing is done at the Versailles IVTC campus; alumni work is computed at a local bank.
- D. Telephone: Hanover is in Indiana Telephone Company territory.
  1. The College's PBX has 218 stations.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: The College cooperates with a local AM station and does some programming for the station.
- B. Television equipment is used primarily in education, speech, and athletics.
- C. Computer
  1. Hanover offers a course in computer programming.
  2. The Purdue terminal is used to support academic research.
- D. Telephone costs are about $18,000 per year for both local and long-distance calling; the College uses the telephone in recruiting.

V. FUTURE PROGRAMS
The primary plan for the future in telecommunications is that the new fine arts center will house radio and television facilities.

VI. EXPRESSED NEEDS
- A. The College needs lower telephone costs.
- B. Computing needs are for greater service at lower cost, but they don't feel that more hardware is justified.
- C. They need to obtain access to good service for their television equipment.

VII. REACTIONS FROM VISIT
- A. They seem to be interested in telecommunications but have adopted a "wait and see" attitude.
- B. Local telephone service is reportedly poor.

C. Because of their relative isolation, they have some problems in acquiring resources.
D. The President feels that today an institution cannot justify large expenses in hardware, so telecommunications networking might provide the access they need to large systems.
E. The College has a good relationship with the community, as seen in the fact that the radio station gives them whatever broadcasting air time they want.

HOLY CROSS JUNIOR COLLEGE — Two-Year Liberal Arts '73-'74 Enr: 255
Notre Dame — North Central Indiana

I. PERSON INTERVIEWED: Brother John Driscoll, President and Dean

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Holy Cross is in the South Bend television market.
- B. South Bend's CATV system carries IHETS programming on mid-band.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television: The College has a master antenna but no other facilities.
- C. Computer: Holy Cross does not use computer services.
- D. Telephone: The College has a key system with twelve telephones and four central office trunks.

IV. ON-GOING PROGRAMS
- A. Radio: No programming is practiced.
- B. Television: The College offers one broadcasting course, for which students use the facilities at WNDU-TV at Notre Dame.
- C. Computer facilities are not used.

V. FUTURE PROGRAMS--None reported.

VI. EXPRESSED NEEDS--None reported.

VII. REACTIONS FROM VISIT
- A. The College is a member of the Northern Indiana Consortium of Education (NICE).
- B. Holy Cross is at the enrollment desired, and they recruit locally and have no students living on campus, so they have few needs for telecommunications.
- C. There would be some interest in videotaped programs if a videotape machine were available on which to play them.

HUNTINGTON COLLEGE — Liberal Arts — '73-'74 Enr: 468
Huntington — Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Dr. E. DeWitt Baker, President
- B. Dr. Watson S. Custer, Dean of the College
- C. Mr. Paul Keller, Business Manager
- D. Mr. Dave Lloyd, Television Center
- E. Dr. Gerald Smith, Assistant Professor of Chemistry

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Huntington is in the Fort Wayne television market.
- B. The area is also served by Huntington CATV, Inc.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television
  1. The College has one control room and one studio located near the auditorium stage; the facility contains a two-camera black-and-white production system with two 1/2-inch old-format videotape machines and two 1/2-inch EIAJ-Type I machines.
  2. The College also has an off-air antenna and a campus-wide RF distribution system.
- C. Computer: Computing work is sent to outside agencies.
- D. Telephone: Huntington is in Indiana Bell territory.
  1. The College's PBX-756 has 56 stations; since the system capacity is 60 stations, they are near the limit of the present facilities.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported, although there are a number of audio cassettes of taped addresses used in particular classes.
- B. Television
  1. The College is developing a library of tapes; they have made some tapes in the studio for various academic departments of the College and have made some psychology tapes for Saint Francis College.
  2. Facilities are also used for broadcasts of sports, school activities, and visits to area schools for student teaching evaluation.
  3. Three courses in radio-TV are offered, and there is a cooperative internship arrangement with WKJG (Channel 33) in Fort Wayne.
- C. Computer: No academic work is done on computers; administrative jobs are sent out accordingly:
  1. financial and enrollment data to the Advanced Computer Corporation in Fort Wayne;
  2. payroll to People's Trust Bank in Fort Wayne;
  3. mailing labels to The Sunday Visitor (an area weekly paper).

D. Telephone: The College spends about $830 per month on long-distance calls and another $830 on equipment.

V. FUTURE PROGRAMS--None reported.

VI. EXPRESSED NEEDS

A. They would very much like to have more pre-recorded instructional programming for television.

B. They have had some problems with the outside computer sources and feel that having to send jobs out has hindered their growth in this area.

VII. REACTIONS FROM VISIT

A. The Dean's knowledge of instructional technology was most impressive.

B. The College is involved in instructional technology, but financial resources limit that involvement to less than they would like; as with so many other institutions, economics tend to be the deciding factor.

INDIANA CENTRAL COLLEGE — Liberal Arts — '73-'74 Enr: 2462
Indianapolis — Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Larry Collins, Director of Data Processing
- B. Dr. James Jones, Associate Professor of Education
- C. Mr. James Ream, Instructor of Speech
- D. Dr. Gene E. Sease, President
- E. Dr. Edward Von Drak, Professor of Physics
- F. Mrs. Florabelle Wilson, Head Librarian
- G. Mr. Lynn Youngblood, Assistant to the President

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Indianapolis is not served by CATV but has three broadcast television stations presenting programming of the three major networks, one independent broadcast station, and one public broadcasting station as well as a number of radio stations, both educational and commercial.
- B. There is an ITFS in Indianapolis (WAT 21).

III. HARDWARE INVENTORY
- A. Radio: The College's station is WICR-FM at 88.7 mhz.
  1. The ten-watt station has two combination control room/studios; facilities overlook the stage in the auditorium.
  2. There are various lines around campus for remote capability.
- B. Television: There is no distribution system on campus, and all equipment is located in the television lab.
  1. Black-and-white equipment includes two vidicon cameras and a small portable production console which contains audio and switching equipment and camera controls.
  2. There are two one-inch color videotape machines and two color monitors.
  3. ICC also owns two 1/2-inch portapacks.
  4. The TV lab has a tuner and reception tower.
- C. Computer: The College has a Honeywell 2020 with 32k memory and a number of peripheral capabilities operating on batch.
- D. Telephone: Indiana Central is in Indiana Bell territory.
  1. The Centrex II-812 has a capacity of 1000 stations and is currently equipped with 105 telephones.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: The station is run by student volunteers, and programming consists primarily of rock music.
  1. The station occasionally carries convocations and does remotes around campus.
  2. The UPI service is their only outside news source; they carry a Sunday church service and sometimes acquire public service programming from BBC, CBC, etc.; they have run the Metropolitan Opera broadcasts in the past.

B. Television
   1. Facilities are used primarily for micro-teaching, although there is some use in astronomy and speech.
   2. Videotape demonstrations in Nursing and Education have been developed.

C. Computer
   1. The Honeywell is used heavily for administrative and alumni business.
   2. There are also two computer science courses.

V. FUTURE PROGRAMS
   A. Radio plans include the updating of transmission equipment; the station is also seeking funds for addition of network programming.
   B. Television personnel hope to purchase programming from city hospitals and other outside areas, especially for use in nursing courses.
   C. Indiana Central is currently developing an Associate Degree program in Computer Technology.
   D. There are plans for a new library/media building that will have space for radio-TV facilities.

VI. EXPRESSED NEEDS
   A. The area of radio needs improved facilities and programming, especially in educational and community-service programming.
   B. A primary television need is for technical support for equipment service and purchasing; they also need to improve their facilities to keep up with present programs.
   C. The computer system is large, and personnel would like to acquire outside users, although faculty and students occasionally need a larger service than their own system can provide.

VII. REACTIONS FROM VISIT
   A. Despite plans to up-grade equipment, radio station personnel do not want to increase power.
   B. All staff members interviewed were most cooperative.

INDIANA INSTITUTE OF TECHNOLOGY Technical Institute '73-'74 Enr: 428
Fort Wayne Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Charles R. Carr, Director of Computer Center
- B. Dr. Charles Terrell, President
- C. Dr. Walter J. Williams, Vice President and Academic Dean

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Indiana Tech is in the Fort Wayne television market; there is neither CATV nor ITFS in the area; however, there is a public television station on the air repeating from Bowling Green, Ohio.
- B. There is an IHETS Video Network drop at IUPU-Fort Wayne.

III. HARDWARE INVENTORY
- A. Radio: The carrier-current station is WITB at 550 on the AM dial; it has automated operation during some parts of the day.
- B. Television: Facilities are limited to one 1/2-inch old-format videotape recorder.
- C. Computer: The IBM-1130 has 8k memory and one disc which operates on batch; it has a line printer and card reader.
- D. Telephone: Indiana Tech is in General Telephone territory.
  1. The PBX-L55B has a capacity of 80 stations and has 48 telephones in service.
  2. The Institute has two out-WATS lines (one for Indiana and one for all areas east of the Mississippi).

IV. ON-GOING PROGRAMS
- A. Radio: the station is strictly a student activity, and programming is entirely music.
- B. Television: there are no programs in television.
- C. Computer
  1. Facilities receive heavy administrative and academic use; they are used in computer science classes as well.
  2. Indiana Tech has a small amount of program sharing with IVTech and provides computational assistance to Saint Francis College, Fort Wayne Bible College, and some area high schools.
  3. At one time, Indiana Tech examined a connection with Purdue, and the grant had been approved; however, since the grant was not on-going, the connection would have been too expensive for them to maintain after the grant had expired.
- D. Telephone: The WATS lines are used primarily in recruiting.

V. FUTURE PROGRAMS
- A. Primary plans are to update and expand computer resources within the next few months.
- B. After this expansion they could take on more work from other sources.

VI. EXPRESSED NEEDS

A. The present computer system is small and slow, and thus it is regarded as inadequate to present needs; there is some difficulty meeting the needs of outside users as well.

B. The faculty feels the need for greater computing capacity and would make use of more prepackaged programs if they had a larger system.

C. A larger data base is needed for some administrative jobs.

VII. REACTIONS FROM VISIT

Because of similarities of purpose, Indiana Tech and other technical/engineering schools would seem to benefit greatly from telecommunications cooperation and from networking.

MANCHESTER COLLEGE — Liberal Arts — '73-'74 Enr: 1200
North Manchester — Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Howard A. Book, Dean of the College
- B. Mr. Samuel M. Davis, Assistant Professor of Speech Communication
- C. Dr. Eldon E. Fahs, Assistant to the President
- D. Dr. A. Blair Helman, President
- E. Mr. Dale McCauley, Assistant Professor of Mathematics
- F. Mr. Robert J. Nelson, Associate Director of A-V
- G. Mr. David Yeatter, Business Manager

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Manchester is in the Fort Wayne television market.
- B. There is neither CATV nor ITFS in the area.

III. HARDWARE INVENTORY
- A. Radio
  1. Manchester College has a carrier-current AM station and an FM broadcast station (WBKE) at 89.5 mhz with 3000 watts of power.
  2. There are two combination studios (one for each station) and one recording studio.
- B. Television
  1. Manchester has a variety of television equipment:
     a. one studio and separate control room;
     b. two vidicon cameras with complete production control console;
     c. one film chain;
     d. three one-inch Ampex tape machines; and
     e. a number of both old-format and EIAJ-Type I 1/2-inch tape machines.
  2. In addition, there is a stereo-audio distribution system in the Communication Building as well as a four-channel RF distribution system in two of the campus buildings.
- C. Computer: The College has two computer facilities.
  1. The IBM-System 3, Model 6, with 8k memory is for administrative purposes.
  2. An IBM-1130 with 8k memory receives primarily academic use.
- D. Telephone: North Manchester is in General Telephone territory.
  1. The College's PBX has eight trunks and 150 stations.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio
  1. Carrier-current station programming is wholly music; the FM station alternates information with its music and news.
  2. They acquire outside programming from a number of sources (such as the SIU and Purdue networks, the Intercollegiate

Radio System, the Longhorn Radio Network, and the American College Radio Network); they also do remote broadcasts and have carried election coverage.

3. Manchester offers six courses in broadcasting, about half of which are radio-oriented.

B. Television

1. Facilities are used primarily in broadcast education courses.
2. Communication Center personnel have worked with some departments on the development of instructional materials for classroom use, but they have not produced for outside users.

C. Computer

1. The academic computer facility is used totally for computer science courses and is operated by the students.
2. The College is doing some admissions computing at Computer Service Bureau in Marion.

D. Telephone: The College spends about $1500 per month on long-distance calls alone.

V. FUTURE PROGRAMS

A. The College is developing an A.A. degree program in a field with Computer Programming emphasis.
B. Other plans are to do more instructional programming in television for the faculty.

VI. EXPRESSED NEEDS

A. Computer needs are dual:
   1. a larger, faster computer for administrative work, and
   2. larger, more powerful languages for the academic computer.
B. They need television hardware.
C. Instructional materials are particularly needed in the areas of Sociology, Social Work, Continuing Education, and languages; also, more instructional programming is needed for radio.

VII. REACTIONS FROM VISIT

A. The College has a very advanced Communication Center with a relatively strong program in radio-TV.
B. The College's solid pre-med program might profit from some of the medical programming currently on the IHETS Video Network.

MARIAN COLLEGE — Liberal Arts — '73-'74 Enr: 959
Indianapolis — Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Robert Gasper, Computer Director
- B. Dr. Louis Gatto, President
- C. Mr. Donald Johnson, Chairman, Speech and Theatre Departments
- D. Sister Norma Rocklage, former Dean of Academic Affairs
- E. Col. L. W. Wagner, Business Manager and Controller
- F. Sister Therese Wente, Director of Audio-Visual Materials

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Indianapolis is not served by CATV but has three broadcast television stations presenting programming of the three major networks, one independent broadcast station, and one public broadcasting station as well as a number of radio stations, both educational and commercial.
- B. There is an ITFS in Indianapolis (WAT 21).

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television
  1. The Department of Education has a 1/2-inch EIAJ-Type I videotape recorder.
  2. The Department of Physics and Science has a similar videotape recorder.
- C. Computer
  1. The College has two dial-up terminals and does its academic computing through either Compu-Serve in Columbus, Ohio, or the National Computer Network in Chicago.
  2. Administrative computing is done at the Riley Tar and Chemical Company (using a Burroughs 3500 on batch).
- D. Telephone: Marian is in Indiana Bell territory.
  1. The PBX-701 has 85 stations.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported.
- B. Television: the equipment in the Department of Education is used for micro-teaching.
- C. Computer
  1. Marian offers two or three basic computer science courses.
  2. Use of computer facilities is being encouraged via informal faculty seminars.
- D. Telephone: The College spends approximately $500-$800 per month on long-distance calls.

V. FUTURE PROGRAMS
- A. The College has a Title VI grant for $25,000 for a mini-TV studio to be used primarily by mass communications majors.
- B. They are investigating WATS for Admissions use.

VI. EXPRESSED NEEDS

A. A basic computer need is for the greatest possible computing time for the least amount of money.

B. A central WATS line or any financial break in telephone bills would be of great help.

VII. REACTIONS FROM VISIT

A. Marian College personnel at one time looked into the possibility of a connection with IHETS; however, at that time the cost would have been prohibitive, although it certainly was needed.

B. The College uses Educational and Instructional Cooperative Services of New York for bulk-purchasing of almost all of its supplies.

C. There is an exchange program with Indiana Central College and IUPUI for speech and play production.

D. Their minor in communications will soon become a major.

E. They are attempting to develop in communications in both administrative and academic areas.

MARION COLLEGE — Liberal Arts — '73-'74 Enr: 756
Marion — Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Max E. Banker, Registrar
- B. Dr. C. Maurice Burns, Dean of the College
- C. Dr. Woodrow Goodman, President
- D. Mr. William R. Klinger, Assistant Professor of Mathematics
- E. Mrs. Betty Lusk, Librarian
- F. Mr. William F. Tice, Business Manager
- G. Dr. Robert Werking, Chairman, Division of Natural Science and Mathematics

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Marion Cable Television, Inc. serves the city.
- B. There is no ITFS in the area.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television: Equipment consists of one Ampex one-inch videotape recorder, one 3/4-inch videocassette, one color monitor, and one vidicon camera.
- C. Computer: Plans are being made for one terminal from the Taylor University computer on a dial-up basis using time-sharing mode in BASIC.
- D. Telephone: Marion is in Indiana Bell territory.
  1. The PBX-701 has 96 stations.
  2. The College has some tele-lecture units, used in political science courses, and there are phone jacks in most classrooms to accomodate the units.
  3. There are no special line services.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported.
- B. Television
  1. Marion offers one broadcasting course.
  2. Equipment is used in education courses and for microscopy in science courses.
  3. The College has been working on the use of television with physiograph.
- C. Computer
  1. Administrative computing is sent out as follows:
     a. registration to NIFSCO;
     b. payroll to First National Bank of Marion;
     c. alumni records to Owosso, Michigan.
  2. The new terminal will be used for academic programs in science and mathematics; the College plans to offer a computer science course in the Mathematics Department in the spring semester of 1974-75.
- D. Telephone: Long-distance costs average $919 per month.

V. FUTURE PROGRAMS--None reported.

VI. EXPRESSED NEEDS

A. NIFSCO is beginning to phase out its educational operations, and Marion would like to be able to establish a central service for administrative computing; they feel they would do more with computers if they had this service; once they gain some experience with the terminal to Taylor, they might like to access other computer services.

B. They need to use telecommunications to extend course offerings, especially in the areas of nursing and the sciences.

C. The College needs telephone savings in general, but particularly for inter-library loan.

VII. REACTIONS FROM VISIT

A. Marion is one of the few schools in Indiana using telelecture units.

B. They would seem to need television to bring in outside resources; the College is especially involved in sciences, where educational technology has proven of great benefit.

C. Students at Marion College and Taylor University can now cross-register.

NORTHWOOD INSTITUTE '73-'74 Enr: 193
West Baden Southwest Indiana

I. PEOPLE INTERVIEWED
   A. Mr. Arthur Berman, Head Librarian
   B. Mr. James McEllhiney, Academic Dean

II. AREA OR COMMUNITY SERVICES AVAILABLE
   A. There is neither CATV nor ITFS in the area.
   B. The community can receive Indianapolis, Terre Haute, and/or Evansville television stations over the air.

III. HARDWARE INVENTORY
   A. Radio: The Institute operates a carrier-current station, WBNI.
   B. Television: Equipment includes one portapack and one monitor.
   C. Computer: There is one terminal which accesses Datatron in Louisville.
   D. Telephone: Northwood is in the territory of the Smithville Telephone Company; its PBX has five trunks and 41 stations.

IV. ON-GOING PROGRAMS
   A. Radio: The station is a student activity.
   B. Television: In the past, the Institute has used its equipment for speech class work, but they are doing little with it at present.
   C. Computer: The terminal is used in one course in computer science; no administrative work is computerized.
   D. Telephone: Long-distance calling costs average $1000 to $1500 per month; a good deal of this calling is to the other Northwood campuses in California, Michigan, and Texas.

V. FUTURE PROGRAMS--None reported.

VI. EXPRESSED NEEDS
   A. Telephone cost-savings are needed.
   B. Also needed are programs to supplement instruction in the fundamental liberal arts areas.

VII. REACTIONS FROM VISIT
   A. The Institute is doing as much in telecommunications as is needed for its small enrollment, and they have close ties with the other Northwood campuses, which help meet their needs (e.g., there is a large television facility at the Michigan campus).
   B. To bolster accreditation, they are moving from a four-year to a two-year curriculum.
   C. The Institute is isolated, but that seems not to be detrimental.

OAKLAND CITY COLLEGE — Liberal Arts — '73-'74 Enr: 452
Oakland City — Southwest Indiana

I. PEOPLE INTERVIEWED
   A. Dr. Richard V. Beesley, Dean of the College
   B. Mr. James W. Murray, President

II. AREA OR COMMUNITY SERVICES AVAILABLE
   A. Oakland City is in the Evansville television market, including the PTV station, WNIN at Channel 9.
   B. There is no CATV or ITFS in the area.

III. HARDWARE INVENTORY
   A. Radio: No facilities were reported.
   B. Television: The College has one 1/2-inch EIAJ-Type I videotape recorder and one vidicon camera.
   C. Computer: No facilities were reported.
   D. Telephone: Oakland City is in the Princeton Telephone Company territory; the PABX has 50 stations.

IV. ON-GOING PROGRAMS
   A. Radio: No programming was reported.
   B. Television:
      1. Equipment is used in education and speech classes.
      2. The Math Education professor is using videotapes from Indiana University in math methods.
      3. The purchase of videotape materials in study skills is being investigated.
   C. Computer: The facilities of the University of Evansville and ISU-Evansville have been offered to them, but they are currently using no computer facilities.
   D. Telephone: Long-distance calling costs average between $200 and $300 per month.

V. FUTURE PROGRAMS--None reported.

VI. EXPRESSED NEEDS
   A. There are academic needs for a computer terminal.
   B. The College would like to get television courses from IVTC in technical and career areas.

VII. REACTIONS FROM VISIT
   A. The one attempt to computerize grades on the VU computer was unsuccessful.
   B. They are developing vocational-technical programs that would greatly benefit from use of the computer and television.

ROSE-HULMAN INSTITUTE OF TECHNOLOGY Technical Institute '73-'74 Enr: 1023
Terre Haute West Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Herman Cole, Librarian
- B. Dr. Darrel Criss, Director of Computer Technology
- C. Dr. Calvin Dyer, Chairman, Humanities Department
- D. Dr. John A. Logan, President
- E. Dr. James B. Matthews, Vice-President for Academic Affairs
- F. Dr. William Schindel, Director of Computer Center
- G. Mr. R. T. Willets, Business Manager

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Terre Haute has a CATV system (Indiana Cable Television, Inc.), but service has not been extended to the Rose-Hulman campus, which lies just outside of the eastern city limits.
- B. There will soon be an ITFS in the area, owned by the I.U. School of Medicine and operated by Indiana State University.
- C. Terre Haute has three commercial broadcast television stations presenting programming of the three major networks; there are also a number of commercial AM and FM radio stations and one educational radio station (WISU-FM).

III. HARDWARE INVENTORY
- A. Radio: WRTR is a carrier-current student activity with campus coverage.
- B. Television
  1. Equipment consists of three 3/4-inch videocassette recorders, four companion color monitors, and one portapac.
  2. There is currently no distribution system, but some lecture halls have conduits so that they could be wired at some future date.
- C. Computer
  1. One computer is an IBM-1130 with 16k memory operating in batch.
  2. The other main facility is a PDP 11/40 with 32k memory operating in time-sharing.
- D. Telephone: Terre Haute is in General Telephone territory.
  1. The Institute has a PBX-AE 320 equipped with 180 lines, 14 trunks, and 185 stations.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio programming on the carrier-current station is primarily music.
- B. Television
  1. Equipment is used primarily in demonstrations and in labs for recording of data; no outside programming is acquired.
  2. Faculty members in several departments have videotaped their own lectures as one means of self-evaluation and teaching improvement, and videotaped demonstrations of

specialized equipment and microcircuitry have been developed for electrical engineering use.

C. Computer
   1. The Institute offers a major in Computer Science.
   2. Facilities are used for all administrative and academic purposes; the Computer Center does 500-600 jobs per day.
   3. Rose-Hulman also does some programming for Saint Mary-of-the-Woods College.
   4. The Department of Economics and Political Science uses software programs in community land use and in World Dynamics.

V. FUTURE PROGRAMS
   A. The Institute has a grant to investigate computer program-sharing and development among a number of schools in Illinois and Indiana.
   B. The new Learning Resources Center is near completion; although it will not house television facilities, audio-visual services will originate there.

VI. EXPRESSED NEEDS
   A. The Institute needs specialized instructional programming for television facilities and for the Learning Resources Center.
   B. Interest was expressed in PLATO specifically and in CAI more generally.
   C. They need reduction of telephone and computer costs.

VII. REACTIONS FROM VISIT
   A. Rose-Hulman is a member of the Collegiate Consortium of Western Indiana, of which Dr. Calvin Dyer has recently been appointed Interim Director.
   B. Personnel seemed interested and willing to share their resources with other institutions.
   C. Faculty members are alert to those audio-visual instructional materials which can best supplement their own teaching and are encouraged to rent, purchase, or develop them.

SAINT FRANCIS COLLEGE — Liberal Arts — '73-'74 Enr: 1601
Fort Wayne — Northeast Indiana

I. PEOPLE INTERVIEWED
- A. Mr. John P. Burns, Audio-Visual Director
- B. Mr. Harold Gunderson, Head of Speech Department
- C. Mr. Milton Heinrich, Art Department
- D. Mr. John J. Kessen, Business Manager
- E. Mr. Maurice Papier, Art Department
- F. Sister M. JoEllen Scheetz, President
- G. Mr. Philip Wilson, Journalism Department

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The College is in the Fort Wayne television market; there is no CATV and no ITFS in the city; however, there is an educational television station repeating from Bowling Green, Ohio.
- B. There is an IHETS drop in the city at IUPU-Fort Wayne.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television: There is one studio and a separate control room.
  1. There are two vidicon cameras in the studio.
  2. There are also two 1/2-inch EIAJ-Type I videotape machines, three old-format 1/2-inch videotape machines, and one Ampex 660B two-inch tape machine.
  3. The College has an RF distribution system with two channels.
- C. Computer: Saint Francis has no computer facilities of its own, although there is a keypunch in the Science Building.
- D. Telephone: Fort Wayne is in General Telephone territory.
  1. The AE 320 PABX is equipped with 100 stations and ten trunks and has 102 telephones in service.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported.
- B. Television: Programming is still primarily in the developmental stages, but the College has explored a number of possibilities.
  1. One course in television production is taught, primarily for teacher training, in the Speech Department.
  2. The Education Department makes use of the facilities for micro-teaching.
  3. They have prepared supplemental programs in the studio for classroom use.
- C. Computer work is all sent out in batch.
  1. Registration computing is done on the IBM-1130 at Indiana Institute of Technology.
  2. Payroll is handled at People's Trust Bank, which has an IBM-370.
- D. Telephone: The College spends between $100 and $300 per month on long-distance calls with no departmental bill-back.

V. FUTURE PROGRAMS
- A. The College will offer an 18-hour minor in mass communications.
- B. Color cameras and monitors will be added to present equipment, and the College also plans to purchase outside-produced instructional programming.
- C. Administrators are actively exploring additional sources of computer facilities.

VI. EXPRESSED NEEDS
- A. Personnel are extremely interested in acquisition of prepared videotapes and films.
- B. Increased computer resources are needed for both administrative and academic purposes.
- C. They need to be able to hold down costs on long-distance telephone bills.

VII. REACTIONS FROM VISIT
- A. Most needs are related to television and computer, and there was administrative support for seeking computer resources via networking.
- B. The College is heavily involved in television communication and is well equipped for its size.
- C. The Audio-Visual Department is heavily used by both faculty and students.
- D. Contact people showed great interest in IHETS, and, as is typical of schools in the Fort Wayne area, Saint Francis has already begun cooperative efforts in some areas of instructional technology.

SAINT JOSEPH'S COLLEGE Liberal Arts '73-'74 Enr: 1088
Rensselaer Northwest Indiana

I. PEOPLE INTERVIEWED
- A. The Rev. Charles Banet, President
- B. Dr. Robert Garrity, Vice-President for Academic Affairs
- C. Mr. Doyne Hahn, Assistant Librarian
- D. Mr. William Verbrugge, Assistant Director of the Computer Center
- E. Mr. Willard Walsh, Associate Professor of Communications
- F. Dr. Paul Wellman, Vice-President for Finance
- G. Mr. Kenneth Zawodny, Director of the Computer Center

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The CATV system, TV Cable of Rennselaer, Inc., carries primarily Chicago television stations, including Chicago's public station WTTW and the Indiana public station WCAE.
- B. Neither ITFS nor an IHETS drop is located nearby.

III. HARDWARE INVENTORY
- A. Radio
  1. WOWI is both a campus carrier-current station and the audio on Channel 8 of the CATV system.
  2. The station occupies one studio and one combination studio/control room.
- B. Television: Saint Joseph's lost all of its television equipment in a fire in 1973 and has not replaced it to date.
- C. Computer: The main facility is a GA-18/30 with 16k memory plus disc and high-speed line printer.
- D. Telephone: Rensselaer is in United Telephone territory.
  1. The PBX is equipped with 80 lines and six trunks, with 56 stations and all six trunks in use.
  2. There are no special facilities, but there are a number of private lines in addition to the PBX.

IV. ON-GOING PROGRAMS
- A. Radio
  1. The station's programming is primarily music, with some discussion and interviews; it has a Mutual News Service hook-up and has carried Notre Dame football for the Mutual Network.
  2. The College offers courses in broadcasting.
  3. All Core course lectures are held on audiotape in the Library for one year for the use of students and faculty.
- B. Television: No programming was reported.
- C. Computer
  1. Saint Joseph's does its own academic and administrative computing (operating on batch with a number of languages) except for occasionally taking punched cards to Purdue for some large jobs.
  2. The facility also does computing work for Calumet College.

3. They have performed a scanning and data-editing service for the Study of Independent Higher Education in Indiana.
4. The College has a software development grant from U.S. Steel.
5. The College offers an A.A. in Computing Science.

D. Telephone is largely used for fund-raising, development, and recruiting.

V. FUTURE PROGRAMS

A. The radio station plans to move to a middle-of-the-road music format and other types of programming geared toward their CATV audience.
B. The College will be purchasing some 3/4-inch videocassette recorders to facilitate a program exchange in Non-Western Studies with Earlham College.

VI. EXPRESSED NEEDS

A. One primary need is for television equipment and courseware.
B. The College needs cost reductions in their telephone expenses and would like to add an FX line to Chicago and/or Indianapolis.
C. There is also a need for large external computing services, primarily for academic computing.

VII. REACTIONS FROM VISIT

A. Saint Joseph's has a strong computer area; although the facility is modest, it seems to be well used.
B. Future directions for radio and television are under deliberation.
C. Because Core lecturers rely more and more heavily on all types of A-V materials to communicate with large audiences, they are particularly interested in having television equipment and software related to these Core areas.

SAINT MARY-OF-THE-WOODS COLLEGE Liberal Arts '73-'74 Enr: 329
Saint Mary-of-the-Woods West Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Pierre Burke, Dean of Admissions
- B. Mr. J. J. Butler, Jr., Vice-President for Business Affairs
- C. Sister William Eyke, Vice-President for Academic Affairs
- D. Sister Jeanne Knoerle, President
- E. Mr. Clifford Lambert, Instructor, Speech and Drama
- F. Sister Cordelia Moran, Area Chairman, Communications

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Terre Haute has a cable system (Indiana Cable Television, Inc.), but service has not been extended to Saint Mary-of-the-Woods, which lies about ten miles north and west of Terre Haute city limits.
- B. There will soon be an ITFS in the area, owned by the I.U. School of Medicine and operated by Indiana State University.
- C. Terre Haute has three commercial broadcast television stations presenting programming of the three major networks; there are also a number of AM and FM radio stations and one educational radio station (WISU-FM).

III. HARDWARE INVENTORY
- A. Radio: The College has a control room/recording lab but no broadcasting facility.
- B. Television: Saint Mary's owns a 1/2-inch EIAJ-Type I videotape recorder and monitor.
- C. Computer: There are no computer facilities on campus.
- D. Telephone: The College is in General Telephone district.
  1. The PBX-AE75 has 83 telephones in service and is equipped with 300 lines.
  2. There are an outgoing WATS line for Indiana and four bands of outstate WATS.

IV. ON-GOING PROGRAMS
- A. Radio: The audio facilities are used for laboratory exercises in communications classes.
- B. Television
  1. Saint Mary's students use facilities of WTHI-TV in Terre Haute for broadcast education classes as well as the ISU Laboratory School facilities.
  2. They have also used their own equipment to supplement broadcasting and speech classes.
- C. Computer
  1. Records and admissions are handled on the ISU IBM-360/60; computing is on batch and is prepared at Saint Mary's on Mark Sense sheets.
  2. Rose-Hulman Institute's computer facilities are used for academic computing.
- D. Telephone
  1. The College spends about $2200 per month on all phone

service ($900 on WATS and long-distance calls).

2. They have found the WATS lines especially useful for Admissions and the Women's Educational Development (WED) Program.

V. FUTURE PROGRAMS

A. The College is considering replacing its PBX with a Centrex and extending telephone service to dormitories.

B. They are investigating the acquisition of outside-produced instructional materials in the areas of art, teaching methods, psychology, and home economics.

VI. EXPRESSED NEEDS

A. Administrators would like to get a remote terminal for administrative computing use.

B. Instructional programming for television and/or radio is needed.

C. There is also a need for improved cost-effectiveness in telephone service.

VII. REACTIONS FROM VISIT

A. Communications faculty are considering the possibility of applying for an FM station.

B. Saint Mary-of-the-Woods seems most interested in all areas of cooperation and is a member of the Collegiate Consortium of Western Indiana (CCWI).

SAINT MARY'S COLLEGE — Liberal Arts — '73-'74 Enr: 1548
Notre Dame — North Central Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Reginald Bain, Chairman, Department of Communications
- B. Mr. James Baxter, Department of Communications
- C. Mr. Robin Hague, Public Information Director
- D. Dr. Edward L. Henry, former President
- E. Dr. William A. Hickey, Acting President
- F. Sister M. Francesca Kennedy, Acting Vice-President for Academic Affairs
- G. Sister Basil Anthony O'Flynn, Vice-President for Campus Services
- H. Dr. Peter Smith, Mathematics Department

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Notre Dame is part of the South Bend television market, an all-UHF market consisting of affiliates of the three major networks and public television station WNIT.
- B. There is no ITFS in the area, but the CATV system carries IHETS Video Network programming on midband; the IHETS main drop is to IU-South Bend and goes from there to the CATV head-end.

III. HARDWARE INVENTORY
- A. Radio: No facilities were reported.
- B. Television
  1. The College has a two-camera black-and-white portable production unit and 1/2-inch EIAJ-Type I videotape machines; there is a small studio directly adjacent to the theatre in Moreau Hall.
  2. The CATV system is connected to all instructional buildings, and Saint Mary's has origination capability on one channel of the system on campus.
- C. Computer
  1. Saint Mary's has a large new Honeywell 430 with 64k memory operating on DAS (batch and time-sharing simultaneously).
  2. They will have Data-Net, which would allow for a variety of remote terminal entries.
- D. Telephone: Notre Dame is in Indiana Bell territory; the College's Centrex I-701 has 361 stations.

IV. ON-GOING PROGRAMS
- A. Radio: No programming was reported.
- B. Television
  1. Saint Mary's and the University of Notre Dame share costs in communications, equipment, and space; there is a student exchange program between the institutions.
  2. The College uses its facilities primarily for micro-teaching and for an educational exchange program with high school students; they also use the I.U. Astronomy course.

3. The College has occasionally produced original programs of commencement and convocations.

C. Computer

1. The most extensive use of the computer is for Management Information Systems, although some professors use the facility for academic research.
2. Saint Mary's offers three courses in computer science.
3. The Chemistry Department makes considerable use of the computer for laboratory simulations and study aids and for processing laboratory data.

V. FUTURE PROGRAMS

A. Pre-packaged software will be made available by Honeywell to encourage utilization of the new computer system; other plans call for the acquisition of CAI programming.

B. The Communications Department would like to establish ties with WNIT to provide its students with internships and experience.

VI. EXPRESSED NEEDS

A. The College needs increased utilization of the computer system.

B. Also needed are better tape duplication facilities for tapes made for the CATV system.

C. In addition, the Communications Department may need more television equipment, particularly in color, because of increasing student needs for color production experience.

VII. REACTIONS FROM VISIT

A. Saint Mary's belongs to the Northern Indiana Consortium of Education (NICE), which has used computers to transfer student records.

B. The College would like to have a WATS-type telephone service but has avoided WATS because of potential problems in controlling line usage.

C. They need to increase utilization of their large computer facility.

SAINT MEINRAD COLLEGE Seminary and Liberal Arts '73-'74 Enr: 227
Saint Meinrad Southern Indiana

I. PEOPLE INTERVIEWED
- A. The Rev. Richard Hindel, Professor of Biology
- B. Mr. Pete Kaufman, Accounting Department, Abbey Press
- C. Mr. John Luecke, Supervisor of Physical Plant
- D. Mr. Dan Mundy, Data Processing Department, Abbey Press
- E. The Rev. Thomas Ostdick, Academic Dean
- F. The Very Rev. Hilary Ottensmeyer, President-Rector
- G. The Rev. Cajetun White, Registrar

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. The College is in the Evansville television viewing area, although it is far enough from Evansville that reception is difficult.
- B. There is neither CATV nor ITFS in the area.

III. HARDWARE INVENTORY
- A. Radio: The College has an audio recording lab.
- B. Television equipment includes one 1/2-inch EIAJ-Type I videotape recorder, one black-and-white monitor, and one vidicon camera.
- C. Computer facilities consist of an NCR Century 200 with 32k memory and a variety of peripherals, including a taping disc; the computer operates on batch in COBOL and FORTRAN.
- D. Telephone: Saint Meinrad is in the Perry-Spencer Rural Telephone Cooperative; its equipment is handled by Indiana Telephone Company in Jasper.
  1. The PBX (AE Type 301) has 428 stations and a capacity of 2000 lines and 48 trunks.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: The recording lab is used for homiletics student practice.
- B. Television equipment is used in both speech and homiletics.
- C. Computer
  1. Primary use of computer facilities is for data-base management information for the Abbey Press.
  2. Also, three computer programming courses are taught.
  3. The computer is used for student and faculty research, especially in sociology.
  4. Facilities are being used on a limited, experimental basis for student records.

V. FUTURE PROGRAMS
- A. Saint Meinrad has received a large grant for endowment of two chairs, one in speech and one in homiletics; the grant includes monies for television equipment and other equipment relating to speech, homiletics, and communications.

B. Computer plans include a new disc unit to increase storage capacity and a 1900 Univac system primarily for data entry.

VI. EXPRESSED NEEDS

A. In the area of television, primary needs are for programming, especially for anthropology, biology, psychology, sociology.

B. There is also need for hardware, particularly an antenna distribution system.

C. Telephone savings are needed.

D. Many people contacted expressed the community's need for a radio station to serve the immediate area.

VII. REACTIONS FROM VISIT

A. Not directly expressed was a need for some assistance in the development of instructional technology.

B. The remoteness of the institution creates special hardships for connection to the IHETS networks.

TAYLOR UNIVERSITY — Liberal Arts — '73-'74 Enr: 1445
Upland — Eastern Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Allen A. Goetcheus, Assistant Professor of Speech and Drama
- B. Mr. Gerald L. Hodson, Director of Educational Media Center
- C. Mr. Lee Kern, Assistant Professor of Psychology and Director of Testing
- D. Mr. Charles R. Newman, Director of Service Operations
- E. Dr. Milo A. Rediger, President
- F. Mr. R. Waldo Roth, Director of Computing Center
- G. Mrs. Marilyn A. Walker, Associate Professor of English and Journalism

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. There are no television broadcast stations in the vicinity; the University is equidistant from Indianapolis and Fort Wayne.
- B. There is neither ITFS nor CATV in the area.

III. HARDWARE INVENTORY
- A. Radio: The University has no radio station but does have one studio and one control room.
- B. Television
  1. The University has a studio and control room with a two-camera black-and-white production system; they also own three 1/2-inch EIAJ-Type I videotape machines and two one-inch Ampex tape machines.
  2. These facilities are located in the Liberal Arts Building, which also has a tuner and a tower on the building; there is a distribution system.
- C. Computer
  1. Academic computing work is done on the PDP 11/40, which has 32k memory and operates in BASIC in time-sharing.
  2. Administrative work uses a GA-18/30, which operates in batch and has 16k memory.
- D. Telephone: Upland is in Indiana Bell territory.
  1. The PBX-701 has 148 stations.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio facilities serve as a student lab for radio classes.
- B. Television
  1. Use of facilities by the Education Department is heavy, primarily for micro-teaching.
  2. The University offers courses in television production.
  3. Taylor students produce some programs for Marion Cable Television, Inc.
  4. Taylor has used I.U.'s Astronomy course (getting it on tape through the mail).

C. Computer
   1. Taylor offers computer services to a number of area public schools.
   2. "Career Training in Systems Analysis" is a special program in computers funded by the Lilly Endowment, Inc. and offered by Taylor.
   3. The University is developing systems programs in CAI drill and practice.

V. FUTURE PROGRAMS
   A. Taylor plans to develop a media major.
   B. They are also planning new television studios (one in the theatre and one in the gymnasium).
   C. They want to improve and further develop computer software, and they are actively encouraging outside users for their computer facilities.
   D. Administrators are investigating the possibility of using CVIS (Computerized Vocational Information System) from the University of Evansville via computer terminal.

VI. EXPRESSED NEEDS
   A. Students in newswriting and broadcasting courses need a wire service or some sort of news-gathering service.
   B. The University would like to acquire more high-quality outside-produced video and audiotape courseware, and faculty would also like to get PBS programming.
   C. They need to save money in purchasing video and audiotape.
   D. The University would like to have WATS, but it is presently too expensive.

VII. REACTIONS FROM VISIT
   A. If the media major is developed, students would benefit from having a 10-watt FM station. (Taylor at one time had a carrier-current station, but operations were discontinued in 1972 because of lack of funds.)
   B. Computer personnel are interested in working with additional outside users; if given the opportunity they themselves would use outside resources.
   C. A cooperative attitude prevails at the University, and they hosted the first Indiana Independent College Computer Conference on May 4, 1974.
   D. Being rather isolated, they would probably make good use of outside resources.
   E. The Taylor faculty seems very knowledgeable in all areas of telecommunications and makes good use of the systems they have available.

TRI-STATE COLLEGE — Technical Institute '73-'74 Enr: 1431
Angola — Northeast Indiana

I. PEOPLE INTEVIEWED
- A. Dr. Richard M. Bateman, former President
- B. Mr. James Bobay, Director of the Computer Center
- C. Mr. Paul Eble, Assistant Professor of Physics
- D. Dr. Ronald J. Lewis, Vice President
- E. Mr. John W. McClellan, Director of Development
- F. Mrs. Elizabeth B. Orlosky, Associate Professor of Speech
- G. Mr. Billy E. Sunday, Business Manager and Secretary-Treasurer

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Angola is in the Fort Wayne television market.
- B. Liberty TV Cable Inc. serves the community and carries primarily Fort Wayne stations.

III. HARDWARE INVENTORY
- A. Radio: The Speech Department operates a carrier-current station, WTSC.
- B. Television: All equipment is housed in the Education Department.
  1. There are three EIAJ-Type I VTR's, a portapack, monitors, and one vidicon camera.
  2. All equipment is black and white.
- C. Computer: The College has a GA-18/30 with 16k memory.
- D. Telephone: Angola is in General Telephone territory.
  1. The PBX-L80 has a capacity of 80 lines and currently has 98 telephones in service.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS
- A. Radio: The station is student-run and programs music.
- B. Television
  1. The College offers broadcasting courses.
  2. Equipment is also used in teacher training.
- C. Computer
  1. Tri-State offers two four-year programs and two two-year programs in Computer Science.
  2. Some budget programming is done, but the computer is used primarily to support computing courses.
- D. Telephone
  1. Long-distance bills average $800 per month.
  2. The College has found the telephone valuable in recruiting and alumni affairs.

V. FUTURE PROGRAMS--None reported.

VI. EXPRESSED NEEDS
- A. The need is felt for a broadcast radio station.
- B. More television equipment is needed.
- C. Local origination on the cable system would be helpful.

D. With all of their computer science programs, they need a faster computer with larger storage capacity.
E. They need a WATS-type service since they make many calls to Michigan.

VII. REACTIONS FROM VISIT
A. The College works closely with General Motors Institute.
B. Staff would like to upgrade the deficiencies which they are conscious of in radio-television.
C. They are interested in any area of cooperation that could be developed among the engineering and technical schools of Indiana.

UNIVERSITY OF EVANSVILLE — University — '73-'74 Enr: 5118
Evansville — Southwest Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Deryl A. Blackburn, Audio-Visual Specialist
- B. Mr. Gilbert L. Clardy, Assistant Professor of Speech
- C. Mr. Robert Field, Assistant Professor of Communications
- D. Mr. Alan Labovitz, Director of the Center for Communications
- E. Mr. Manfred Schauss, Director of Data Processing
- F. Dr. Charles E. P. Simmons, Vice-President for Academic Affairs
- G. Ms. Helen Smith, Dean, School of Nursing
- H. Mr. Paul Sullivan, Assistant Professor of Journalism
- I. Mr. Richard Weber, Associate Professor of Education
- J. Mr. J. Donald Widick, Director of Purchasing

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Evansville is a mixed market of UHF and VHF stations; there is no CATV system.
- B. The University is a member of the community television authority which is the licensee of WNIN-TV (Channel 9), Evansville's public television station.
- C. There is an IHETS Video Network drop at ISU-Evansville.

III. HARDWARE INVENTORY
- A. Radio
  1. The University station is WEVC-FM Stereo at 91.5 mhz; its power is 5.7 kw, and it has a 50-mile radius coverage area.
  2. The station has one combination studio and control room.
- B. Television
  1. Present equipment includes reel-to-reel 1/2-inch EIAJ-Type I videotape recorders and a two-camera portable black-and-white production unit.
  2. The new Nursing Building has a separate television facility:
     - a. there are two studio-type color cameras with complete special effects package and related production equipment;
     - b. there are at least six 3/4-inch videocassette machines;
     - c. there is also one vidicon camera.
- C. Computer
  1. The University's IBM-370/135 has 256k virtual memory and operates on both batch and time-sharing; two 3340 disc drives have added 140m bytes of storage.
  2. The School of Engineering is acquiring a PDP-11 with 16k memory and a teletype terminal.
- D. Telephone: Evansville is in Indiana Bell territory.
  1. The Centrex I-701 has 180 stations.
  2. The University has two out-WATS lines, one each in Bands One and Four.

IV. ON-GOING PROGRAMS

A. Radio

1. WEVC is a student activity and is student-programmed (about 4/5 rock music and some classical and jazz music); students are paid for their work, and the station is supported by general funds of the University.
2. They do have AP wire service, but they acquire little outside programming.
3. A major in broadcasting is available, and broadcasting students use separate facilities for lab work.

B. Television

1. With some of the units in the Library, micro-teaching and self-assessment programs are practiced.
2. In their current television facilities they have produced instructional videotapes for biology, business, chemistry, education, and physics; this material is used in the classroom and is also placed in the campus library for student use.
3. As the new facilities in the Nursing Building become more extensively used, faculty will do quite a bit of instructional programming both for nursing and for other academic areas, and broadcasting majors will be able to use these color facilities.

C. Computer

1. The University does all administrative and academic/research work on its computer.
2. The School of Nursing has used the computer for CAI.
3. The Computer Vocational Information System (CVIS) is used for high school and incoming students in vocational planning and by School of Education students.
4. The University has done a good deal of the computing work for the Study of Independent Higher Education in Indiana.
5. The University offers a B.S. degree in Computing Science.

D. Telephone: The School of Nursing has used the Indiana Bell Tele-Lecture unit.

V. FUTURE PROGRAMS

A. The University is very interested in acquiring outside programming on videocassette.

B. Communications personnel are making a conscientious effort to become involved with television production for the Evansville community.

C. Computer plans include a CAI program in Patho-Physiology.

VI. EXPRESSED NEEDS

A. Computer personnel are interested in using outside software.

B. The School of Engineering would make good use of Purdue programming.

C. The radio station needs programming other than music and could use more news feeds.

D. There is a high-priority need for Nursing Graduate Education programming, courses, and instruction, and the School of Nursing is most interested in any cooperation which might develop among hospitals and/or nursing programs.

VII. REACTIONS FROM VISIT

A. The Computer Director expressed interest in the idea of computer networking, especially in the concept of regional hubs tied together.

B. The University has recently participated in a Lilly-funded study (the Battelle Study) to develop areas of cooperation with ISU-Evansville.

C. The University has hardware in all areas but will be needing courseware.

D. The University is striving to develop a strong nursing program, but outside resources are needed; they are now taking classes to ISUE to see programs on the IHETS Video Network and would seem to benefit greatly from a direct connection.

E. University officials have also expressed a strong interest in an IHETS Radio Network connection for WEVC.

UNIVERSITY OF NOTRE DAME — University — '73-'74 Enr: 8586
Notre Dame — North Central Indiana

I. PEOPLE INTERVIEWED
- A. The Rev. James T. Burtchaell, Provost
- B. Sister Isabel Charles, Assistant Dean, College of Arts and Letters
- C. Dr. Philip J. Faccenda, formerly Vice-President for Student Affairs
- D. Mr. Frank Maxwell, Director, Audio-Visual Center
- E. Dr. Daniel J. Osberger, Assistant Dean of Administration
- F. Brother Just Paczesny, Vice-President for Student Affairs
- G. Mr. Brian Walsh, Director, Computer Center

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Notre Dame is in the South Bend television market.
- B. South Bend has a CATV system (Vally Cablevision Corp.); it comes onto the Notre Dame campus and is distributed from the Audio-Visual Center to at least five campus buildings; the system is maintained by WNDU.
- C. The cable carries IHETS programming on midband, and Notre Dame has a converter to receive the programming; there is no ITFS in the area.

III. HARDWARE INVENTORY
- A. Radio: WSND is AM on carrier current and FM Stereo at 88.9 mhz with 3.4kw and a 360-foot antenna.
- B. Television: WNDU is a commercial station owned by the University; it carries NBC programming.
  1. There is a small studio in the Administration Building.
  2. Each department or school owns its own television equipment, comprised mostly of 1/2-inch EIAJ-Type I videotape recorders; there are also some 3/4-inch videocassette machines and one-inch Ampex and IVC equipment (approximately 2 one-inch, 2 EIAJ-Type II, 3 videocassettes, and 15 EIAJ-Type I).
  3. Numerous vidicon cameras and classroom monitors are used by many departments on the campus (31 cameras and 51 monitors at last count, plus a special effects generator).
- C. Computer
  1. The main facility is an IBM-370/135 with 1.5 mega-byte virtual memory; it has a time-sharing system (TSO) both batch and terminal.
  2. There are a host of other computers around the campus too numerous to mention, all of which are tied into the main computer.
- D. Telephone: Notre Dame is in Indiana Bell territory.
  1. The Centrex I-701 has 1502 stations.
  2. There are no special facilities; Notre Dame formerly had WATS but had to discontinue the service because of problems in trying to control use of the lines.

IV. ON-GOING PROGRAMS

A. Radio

1. The station is student-run and operates year-round; it has Group W news (for which it pays line charges to WOWO in Fort Wayne), and it carries some outside programming such as the Texaco opera series.
2. The station also produces a limited amount of instructional programming.

B. Television

1. Almost every department on campus has developed instructional videotapes for its own use.
2. The University has used programming carried over the IHETS Video Network.

C. Computer

1. The University has an extensive Computer Science program.
2. The History Department has developed a number of CAI programs.
3. The University is doing the data programming for twenty-three of the schools involved in the Study of Independent Higher Education in Indiana.

V. FUTURE PROGRAMS--None specifically reported.

VI. EXPRESSED NEEDS

The Computer Center personnel have explored computer networking among the independent colleges and universities, and they were very much interested in the effect that IHETS might have on regional and state-wide networks; they have found that the major cost would be communications.

VII. REACTIONS FROM VISIT

Interest in computer networking was expressed at a number of faculty and administrative levels; some concern was expressed that the burden placed on a host institution should be taken into consideration and that proper software support be provided.

VALPARAISO UNIVERSITY — University — '73-'74 Enr: 4208
Valparaiso — Northwest Indiana

I. PEOPLE INTERVIEWED
- A. Dr. Harold Gram, Vice-President for Administration
- B. Mr. Norman L. Hughes, Director, Computer Laboratory
- C. Mr. George R. Lux, CCTV Director for Physical Sciences
- D. Dr. Edgar H. Nagel, Associate Professor of Chemistry
- E. Mr. Irving Olsen, Instructional Materials Director
- F. Dr. Donald L. Shirer, Professor of Physics
- G. Dr. John Strietelmeier, Vice-President for Academic Affairs

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Valparaiso is in the Gary-Hammond television market; there is no cable in the area.
- B. The University is also in the reception area of the IHETS-connected ITFS (KPD-40) and of WCAE (public television).

III. HARDWARE INVENTORY
- A. Radio
  1. WVUR-FM at 89.5 mhz is all monophonic and operates at ten watts of power.
  2. The station has one combination control room/studio.
- B. Television
  1. In Gellersen Hall there are a number of facilities and a distribution system:
     a. there is one main control room which can serve as two classroom studios;
     b. in the same area is a multiple-camera black-and-white facility with both one-inch Ampex and 3/4-inch cassette recording capability;
     c. there is also a dial-access TV facility for four carrels;
     d. there is complete terminal and monitor equipment.
  2. A control room and limited distribution system are located in LeBien Hall (School of Nursing).
  3. Niels Science Center also has a control room as well as two 3/4-inch videocassette units for student use.
  4. None of these facilities are interconnected.
- C. Computer
  1. A Burroughs 1726 with 100k bytes memory is used for administrative computing.
  2. Academic and research computing work is done on an IBM 1710 with a 40k memory; both systems operate on batch.
  3. The University's PLATO terminal in the Science Building is connected to the main computer at Champaign-Urbana.
- D. Telephone: Valparaiso is in General Telephone territory.
  1. The Centrex (ITT TC 2 Switch) has a capacity of 6000 lines and has 1575 telephones in service.
  2. There are no special facilities.

IV. ON-GOING PROGRAMS

A. Radio

1. The radio station is entirely a student activity with an all-music format.
2. They make no outside acquisitions.

B. Television

1. The Education Department uses equipment for micro-teaching; Physical Education classes use TV for psycho-motor development; Speech and Drama classes, for performance evaluation.
2. Some instructors use equipment for direct instruction such as the nursing program in procedural demonstration.
3. The University does quite a bit of medical education recording; they have participated in a plan for reception of the ITFS at WCAE to have access to the I.U. School of Medicine programming.

C. Computer

1. The PLATO terminal is used in science classes, and it receives particularly heavy use (a minimum thirty hours per week) in Chemistry and Physics; the programs have met with a great deal of success.
2. The IBM is used by a host of computer science courses--there is strong academic support for computer programs.

D. Telephone: The University uses its new Centrex to provide dial access to ten audiotape recorders in the Library.

V. FUTURE PROGRAMS

The University plans to purchase more television equipment.

VI. EXPRESSED NEEDS

One of the greatest needs is for more instructional programming, particularly in Nursing/Medical Education.

VII. REACTIONS FROM VISIT

A. Faculty are highly impressed with the PLATO terminal; however, they need to reduce line costs (which they are now paying at full price) so that they can expand the areas of experimentation.

B. An atmosphere of self-sufficiency was noticeable in the area of computers.

WABASH COLLEGE — Liberal Arts — '73-'74 Enr: 781
Crawfordsville — West Central Indiana

I. PEOPLE INTERVIEWED
- A. Mr. Carl Gibson, Student General Manager, WNDY
- B. Dr. Joseph O'Rourke, Associate Professor of Speech
- C. Mr. Laurence Pepper, Media Services Librarian
- D. Dr. Thaddeus Seymour, President
- E. Mr. Donald Sperry, Comptroller
- F. Dr. Richard P. Traina, formerly Dean of the College

II. AREA OR COMMUNITY SERVICES AVAILABLE
- A. Crawfordsville's CATV system (Crawfordsville Community Cable Corp.) carries stations from Indianapolis, Lafayette, and Terre Haute.
- B. There are cable drops on campus, and the College has claim to some channels, although they have made little use of them to date.

III. HARDWARE INVENTORY
- A. Radio
  1. The radio station is WNDY-FM at 106.3 mhz; it is a monophonic operation with 1000 watts of power.
  2. There is one combination facility and one additional small studio.
- B. Television: Equipment includes two vidicon cameras, two one-inch IVC videotape recorders, and two 3/4-inch videocassette machines.
- C. Computer
  1. Administrative computing is done on an IBM System 3 with 8k memory.
  2. A PDP-11/20 with 28k memory is used for academic work; it operates on time-sharing in BASIC.
- D. Telephone: Crawfordsville is in Indiana Bell territory.
  1. The PBX-740 has 160 telephones in service and a 200-station capacity.
  2. The College also has an FX line to Indianapolis.

IV. ON-GOING PROGRAMS
- A. Radio
  1. The student-run commercial station is on the air about nineteen hours per day with music and some news; its coverage area extends from Lafayette to Greencastle.
  2. There is no instructional programming, but they have considered hooking up with the Mutual Radio Network.
- B. Television
  1. Facilities are used primarily in speech and public address classes.
  2. They have used some pre-recorded programming in Black Studies from Purdue.
- C. Computer
  1. In addition to regular administrative tasks, computer

facilities have been used for radio logs, and the radio station's record and tape libraries have been computerized.

2. They have developed a DECAL CAI system of several lessons in psychology.
3. Computers are used in engineering-related courses, and students have easy access to the facilities.

D. Telephone: Administrators and faculty have looked into Indiana Bell's Tele-Lecture units, but at the time (partly due to misinformation) they were deemed impractical.

V. FUTURE PROGRAMS

A. Television plans include buying quite a bit of videotape, some of it pre-recorded.
B. Radio station personnel plan to buy pre-recorded musical programming.
C. Computer Center personnel are looking into the purchase of a PDP-11/45 and consequent expansion of administrative computing.

VI. EXPRESSED NEEDS

A. The radio station needs high-quality news-gathering services.
B. High-quality instructional programming is needed for television equipment.
C. The College is interested in external sources of computing services.
D. They need cost-effectiveness in telephone use and would like to have wider service area than that which they have presently.

VII. REACTIONS FROM VISIT

A. Administrative personnel were knowledgeable about instructional technology; they have a realistic approach for a college the size of Wabash, and they seem to be using present equipment rather successfully.
B. The President was most interested in the Collegiate Consortium of Western Indiana (CCWI), of which Wabash is a member, and the impact it might have on sharing of computer hardware and software.

APPENDIX D

SUPPLEMENTS TO RECOMMENDATIONS

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APPENDIX D-1

PROPOSED TELEPHONE NETWORK SERVICE TO

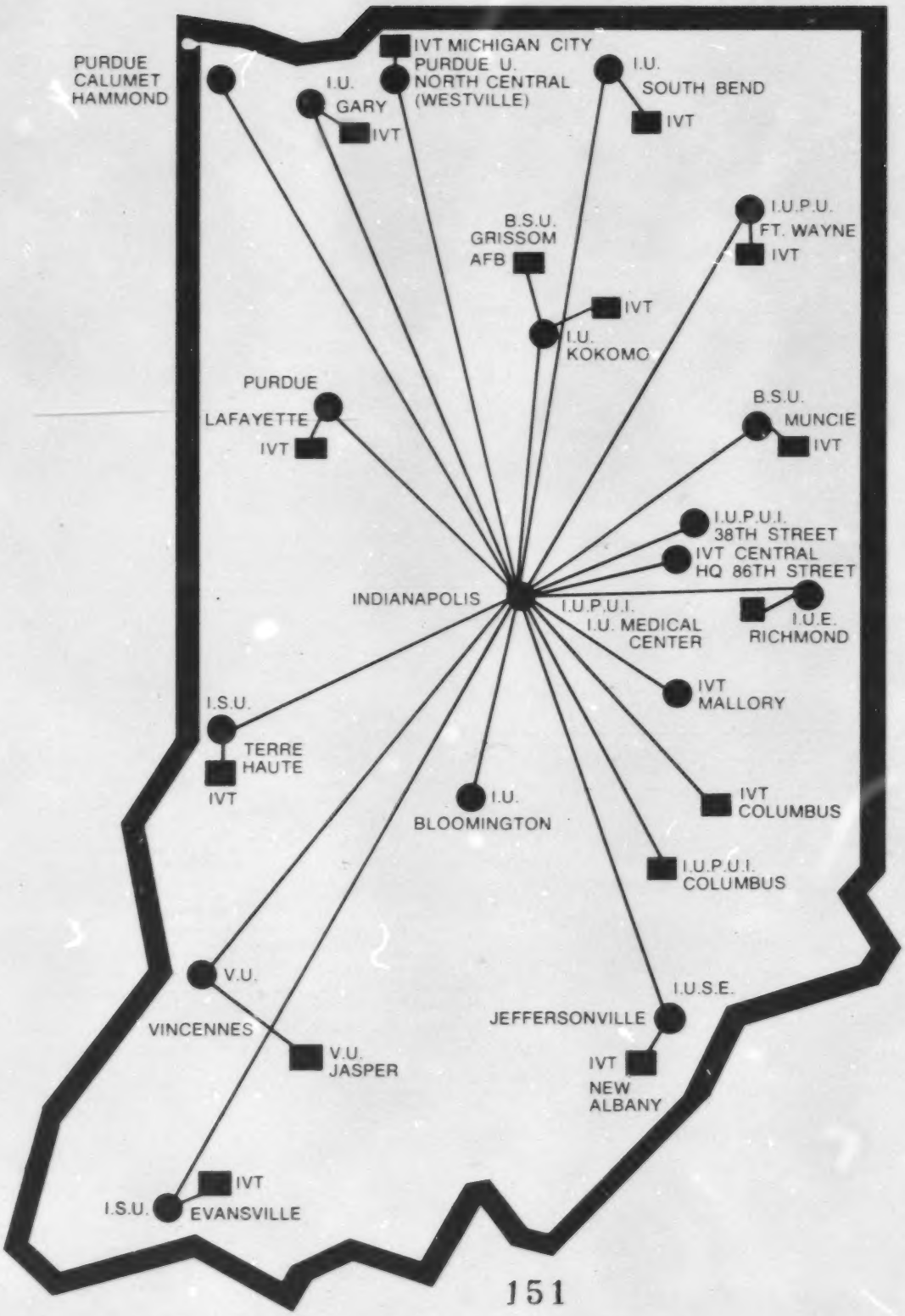
INDEPENDENT COLLEGES AND UNIVERSITIES OF INDIANA

The IHETS/ICUI study shows that connection of the ICUI member institutions to the IHETS voice network is greatly needed. The SUVON configuration recommended here is an extension of the dial tandem service currently provided to the other IHETS member institutions: by dialing a series of access codes, faculty and staff at these institutions can call directly to the state universities or their regional campuses, Vincennes University, any IVTC location, and any other independent institution. Possibilities for additional services are the subject of a current reconsideration of the voice network design.

It must be emphasized that the line requirements and associated costs presented here are merely first (or preliminary) estimates prepared to determine approximate budgetary figures. The number of lines listed for a given institution may increase or decrease according to usage of the network by that institution; IHETS provides a high level of service, either twenty or thirty "busies" per thousand calls during prime time, and the number of lines necessary to maintain that service.

The budgetary requirement for this service for fiscal year 1975 is estimated at approximately $190,000; funding needed for the second year of service (FY 1976) is estimated at $201,000. Another financial consideration is the termination liability that might be applied by the telephone companies if the entire system is removed. The amount of the liability decreases each month the facilities are in service, with no liability remaining after three years of service.

Following are maps of SUVON as currently configured and as it might be configured by this proposal, a budget summary for fiscal years 1975 and 1976, and a breakdown of the estimated preliminary line requirements and costs associated with extending the voice network service to the independent colleges and universities.



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● INDICATES A UNIVERSITY CENTREX OR PBX

■ INDICATES AN OFF-PREMISE EXTENSION

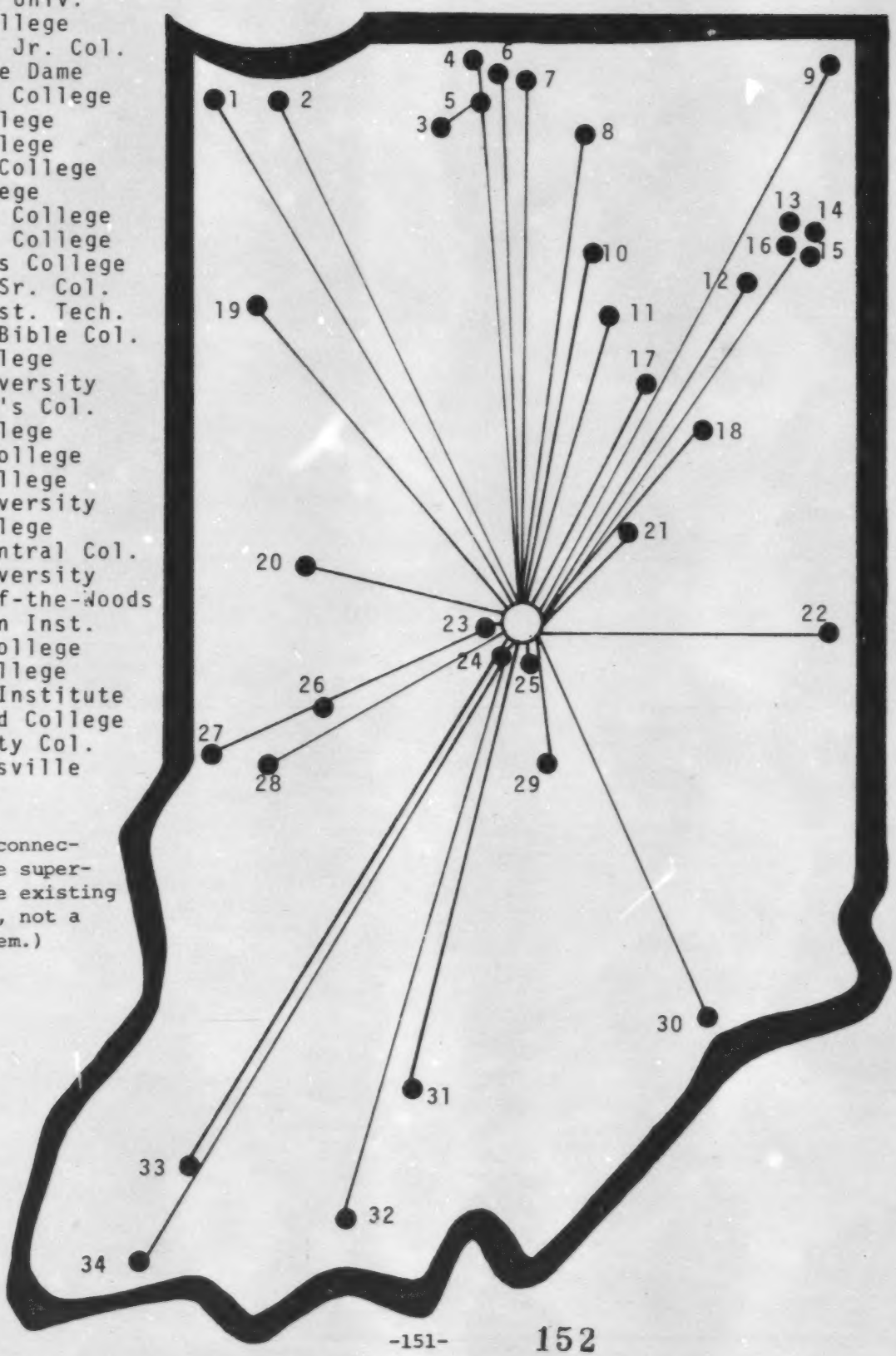
IVT INDICATES VOCATIONAL TECHNICAL COLLEGE REGIONAL CENTER

PROPOSED SUVON SERVICE FOR

INDEPENDENT INSTITUTIONS

1 Calumet College
2 Valparaiso Univ.
3 Ancilla College
4 Holy Cross Jr. Col.
5 U. Of Notre Dame
6 St. Mary's College
7 Bethel College
8 Goshen College
9 Tri-State College
10 Grace College
11 Manchester College
12 Huntington College
13 St. Francis College
14 Concordia Sr. Col.
15 Indiana Inst. Tech.
16 Ft. Wayne Bible Col.
17 Marion College
18 Taylor University
19 St. Joseph's Col.
20 Wabash College
21 Anderson College
22 Earlham College
23 Butler University
24 Marian College
25 Indiana Central Col.
26 DePauw University
27 St. Mary-of-the-Woods
28 Rose-Hulman Inst.
29 Franklin College
30 Hanover College
31 Northwood Institute
32 St. Meinrad College
33 Oakland City Col.
34 U. of Evansville

(NOTE: These connections would be superimposed on the existing SUVON network, not a separate system.)



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APPENDIX D-1

COLLEGE	TYPE OF SUVON SERVICE	EST. TRUNK REQUIREMENT	CIRCUIT (To ROUTING Telpak)	EST. MONTHLY COSTS (per circuit)					EST. TOTAL COSTS
				MILEAGE	CHAN TERMS	CONN. ARR.	RXN	COST PER CIRC.	
Ancilla College	Off-premise (Notre Dame)	1	IXC Donaldson to So. Bend-20 m.	$75.00	$15			$ 90.00	$ 90.00
Anderson Col.	Tandem Tie Line	4	Telpak A to Muncie	79.73	30		$15	124.73	498.92
Bethel Col.	Tandem Tie Line	1	IXC to So. Bend	96.46	15/$6 Local Loop	$15	15	147.46	147.46
Butler Univ.	Local Tie Line	4	Local	6.00		30	15	51.00	204.00
Calumet Col.	Tandem Tie Line	2	Telpak-Hammond	138.63	30		15	183.63	367.26
Concordia Sr. Col.	Tandem Tie Line	1	Telpak-Ft Wayne	41.46	30		15	86.46	86.46
DePauw Univ.	Tandem Tie Line	4	Telpak-Greencastle	97.50	30		15	142.50	570.00
Earlham Col.	Tandem Tie Line	3	Telpak-Richmond	89.38	30		15	134.38	403.14
Ft Wayne Bible Col.	Tandem Tie Line	1	Telpak-Ft Wayne	41.46	30		15	86.46	86.46
Franklin Col.*	Tandem Tie Line	1	IXC to Franklin -21 miles	78.75	12 Local Loop		15	105.75	105.75
Goshen Col.*	Tandem Tie Line	1	IXC to South Bend-23 mi.	167.71	15/6 Local Loop	15	15	218.71	218.71
Grace Col.*	Tandem Tie Line	1	IXC to Ft Wayne -39 miles	187.71	15/6	15	15	238.71	238.71
Hanover Col.* (and IVTech)	Tandem Tie Line	2	IXC to New Albany-35 miles	237.06	15/6	15	15	288.06	576.12
Holy Cross Jr Col.	Off-premise (Notre Dame)	1		15.00				15.00	15.00
Huntington Col.*	Tandem Tie Line	1	IXC to Ft Wayne -24 miles	131.46	15/6	15	15	182.46	182.46
Ind. Central Col.	Local Tie Line	3	Local	6.00		30	15	51.00	153.00
Ind. Inst. Tech.	Tandem Tie Line	1	Telpak-Ft Wayne	41.46	30		15	86.46	86.46
Manchester Col.*	Tandem Tie Line	2	IXC to Ft Wayne -34 miles	168.96	15/6	15	15	219.96	439.92
Marian Col.	Local Tie Line	2	Local	9.00		30	15	54.00	108.00
Marion Col.	Tandem Tie Line	1	IXC to Upland-9 miles	90.98	15/6	15	15	141.98	141.98
Northwood Inst.*	Tandem Tie Line	1	IXC to Jasper-20 miles	255.62	15/6	15	15	306.62	306.62

*HIGH-COST IXC ROUTES

COLLEGE	TYPE OF SUVON SERVICE	EST. TRUNK REQUIREMENT	CIRCUIT (To ROUTING Telpak	EST. MONTHLY COSTS (per circuit)					EST. TOTAL COSTS
				MILEAGE	CHAN TERMS	CONN. ARR.	RXN	COST PER CIRC.	
Oakland City Col.*	Tandem Tie Line	1	IXC to Jasper-20 miles	255.62	15/6	15	15	306.62	306.62
Rose-Hulman Inst.	Tandem Tie Line	4	Telpak-Terre Haute	63.96	30		15	108.96	435.84
St Francis Col.	Tandem Tie Line	2	Telpak-Ft Wayne	41.46	30		15	86.46	172.92
St Joseph's Col.*	Tandem Tie Line	1	IXC to Lafayette -39 miles	206.80	15/6	15	15	257.80	257.80
St Mary-of-the-Woods Col.	Tandem Tie Line	1	Telpak-Terre Haute	63.96	30		15	108.96	108.96
St Mary's Col.	Tandem Tie Line	4	Telpak-South Bend	81.46	30		15	126.46	505.84
St Meinrad Col.*	Tandem Tie Line	1	IXC to Jasper-15 miles	236.87	15/6	15	15	287.87	287.87
Taylor Univ.	Tandem Tie Line	5	Telpak-Muncie	57.23	30		15	102.23	511.15
Tri-State Col.*	Tandem Tie Line	1	IXC to Ft Wayne -40 miles	191.46	15/6	15	15	242.46	242.46
U. of Evansville	Tandem Tie Line	7	Telpak-Evnsvl.	118.20	30		15	163.20	1142.40
U. of Notre Dame	Tandem Tie Line	9	Telpak-So. Bend	81.46	30		15	126.46	1138.14
Valparaiso Univ.	Tandem Tie Line	4	IXC to West-ville-10 mi.	141.40	15/6	15	15	192.40	769.60
Wabash Col.*	Tandem Tie Line	2	IXC to Green-castle-28 mi.	202.50	15/6	15	15	253.50	507.00

*HIGH-COST IXC ROUTES

Budget Summary for FY 1975

I. Breakdown of Monthly and One-Time Charges

		One Time	Monthly
A.	SUVON Service via tandem tie lines for all 34 institutions----		$11,413.03
B.	Installation for A.----	$3,120.00	
C.	Ten (10) additional Level 9 trunks for Indianapolis @ $50 per month----		500.00
D.	Installations for C.----	200.00	
	Total	$3,320.00	$11,913.03

II. Development of Yearly Total for FY 1975

A.	Total monthly (12 months) and installation----	$146,276.36
B.	10% Growth Factor----	14,627.60
C.	10% of Current Yearly SUVON cost ($290,000) to accommodate increased trunking along existing routes----	29,000.00
FY 1975--Total Budget Request		$189,903.96

Budget Summary for FY 1976

1.	Monthly base for tandem tie line service to 34 institutions----	$160,903.96
2.	7% Growth Factor----	11,263.21
3.	10% of Current Yearly SUVON cost ($290,000) to accommodate increased trunking along existing routes----	29,000.00
FY 1976--Total Budget Request		$201,167.17

APPENDIX D-2

PROPOSED RADIO NETWORK SERVICE TO

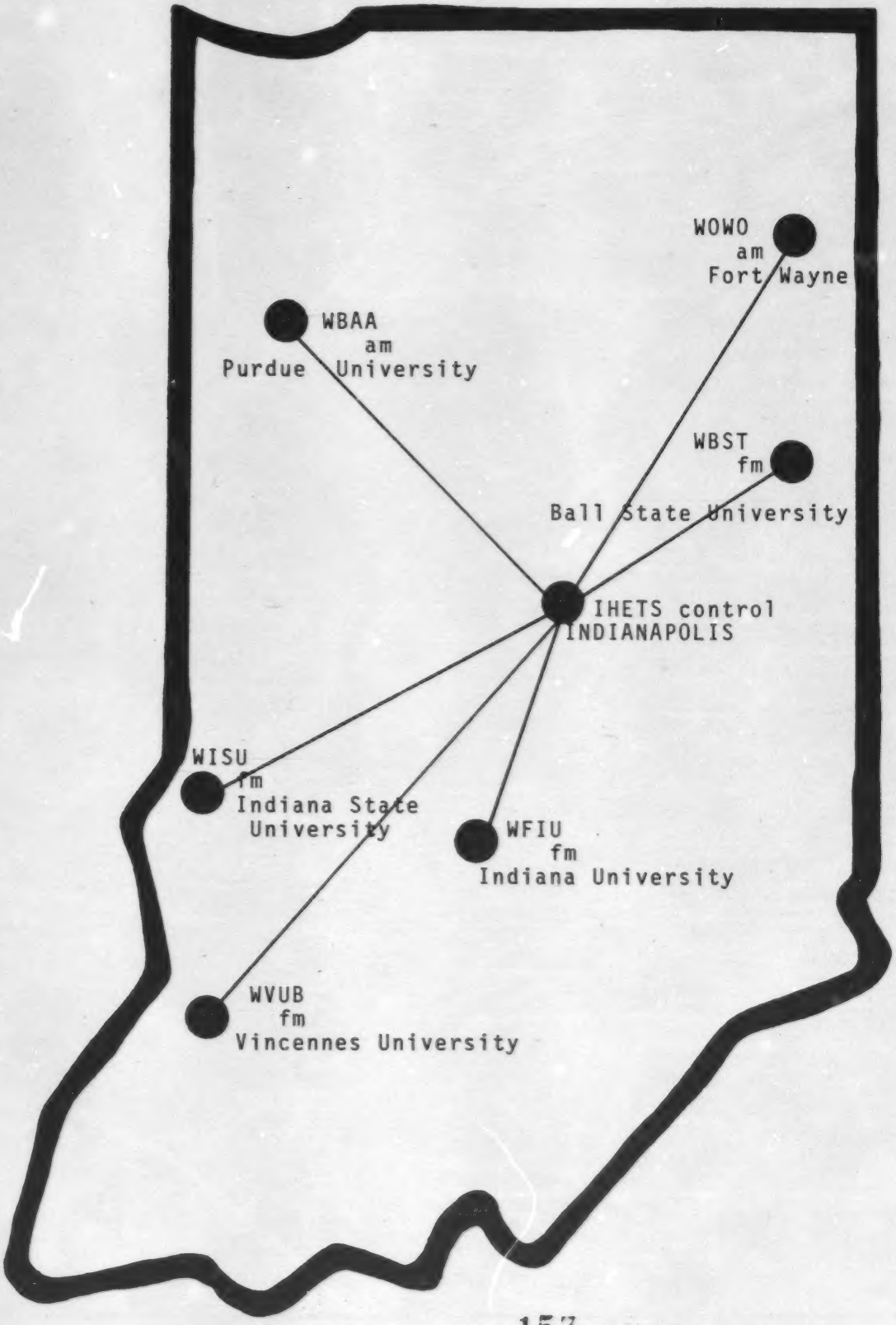
INDEPENDENT COLLEGES AND UNIVERSITIES OF INDIANA

Information and cost estimates for the connection of ten educational radio stations operated by independent colleges and universities are included on the following pages. The estimated costs would be incurred by IHETS, although utilization of Group W news might require additional responsibilities for the stations themselves, such as better supervision and/or a more regular or extended broadcast schedule.

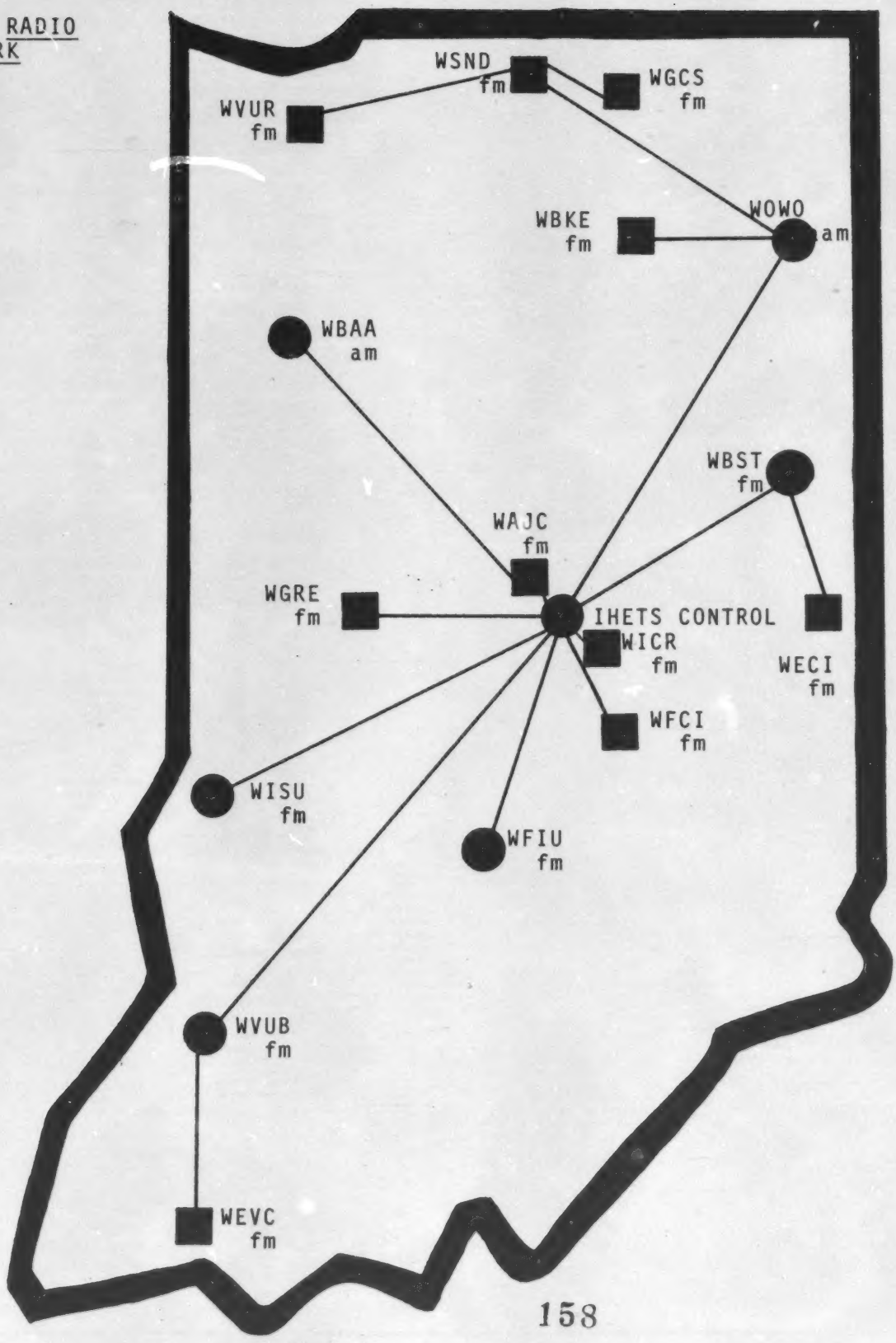
Four stations other than the ten included herein might be eligible for connection to the Radio Network, but a number of considerations excluded them from this initial proposal. When Fort Wayne Bible College's new 50,000-watt station begins operation, it will undoubtedly be a valuable addition to educational radio in Indiana and to the Radio Network, although the station will most probably not be eligible to use Group W news since it will be in Westinghouse's WOWO A coverage area. Because of its commercial operation, WNDY-FM at Wabash will need to be considered separately by the ICUI Board of Directors. Further, although the CATV audiences of St. Joseph's carrier-current station and Anderson's proposed carrier-current station might profit from network news and programming, both connections would be comparatively expensive. It was thus felt that the non-commercial, broadcast stations should be the first stations connected.

RADIO NETWORK

OF THE INDIANA HIGHER EDUCATION TELECOMMUNICATION SYSTEM



PROPOSED RADIO NETWORK



RADIO NETWORK SERVICE FOR INDEPENDENT COLLEGES

(All circuits are two-wire, receive only, except Butler and DePauw.)

SCHOOL	STATION	Network Service Description			
		Circuit Routing	Est. Mileage Cost	Chan. Terms.	Total Monthly Cost
Butler University	WAJC-FM	Local Tie-Line (IHETS)	$ 6.00	$30.00	$ 36.00
DePauw University	WGRE-FM	All Telpak	97.50	30.00	127.50
Earlham College	WECI-FM	All Telpak	77.15	30.00	107.15
Franklin College	WFCI-FM	IXC to Indpls.	78.75	30.00	108.75
Goshen College	WGCS-FM	IXC Tie-line to South Bend (WSND)	86.25	30.00	116.25
Ind. Central College	WICR-FM	Local Tie-line (IHETS)	6.00	30.00	36.00
Manchester College	WBKE-FM	IXC Tie-line to Fort Wayne (WOWO)	127.50	30.00	157.50
U. of Evansville	WEVC-FM	Telpak Tie-line to Vincennes (WVUB)	51.58	30.00	81.58
U. of Notre Dame	WSND-FM*	Telpak Tie-line to WOWO	40.00	30.00	70.00
Valparaiso University	WVUR-FM	IXC Tie-line to WSND in South Bend	168.75	30.00	198.75

*Now has Group W News and pays line charges to WOWO.

TOTAL: $ 1,039.48

TOTAL YEARLY COST: $12,473.76

COSTS OF PROPOSED RADIO NETWORK SERVICE

ONE-TIME COSTS

1.	Telco Installation for Ten Circuits at $40 each ---	$ 400.00
2.	Capital Equipment for Network Control Center (DA's, Patch Fields, etc.) ---	1,000.00
	Total One-Time Costs ---	$ 1,400.00

FIRST-YEAR COSTS

1.	Total One-Time Costs ---	$ 1,400.00
2.	Total Monthly Line Charges @ $1,039.48 per month ---	12,473.76
	Total First-Year Cost	$13,873.76

SECOND-YEAR COSTS AND THEREAFTER --- $12,473.76

APPENDIX D-3

IHETS STATE TELPAK SYSTEM

There are a number of ways in which telephone lines can be leased. The most common (and most expensive) of these is by Inter-Exchange Circuit (IXC) at $3.75 per mile per month for a half-duplex line or $4.68 for a full-duplex line. Wide Area Telephone Service (WATS) uses the DDD network, and WATS lines can be leased on an "in" or "out" basis for numerous sizes of calling areas. The Government Services Administration (GSA) buys interstate telpaks for agencies of the federal government and leases unused channels to state governments on a space-available basis.

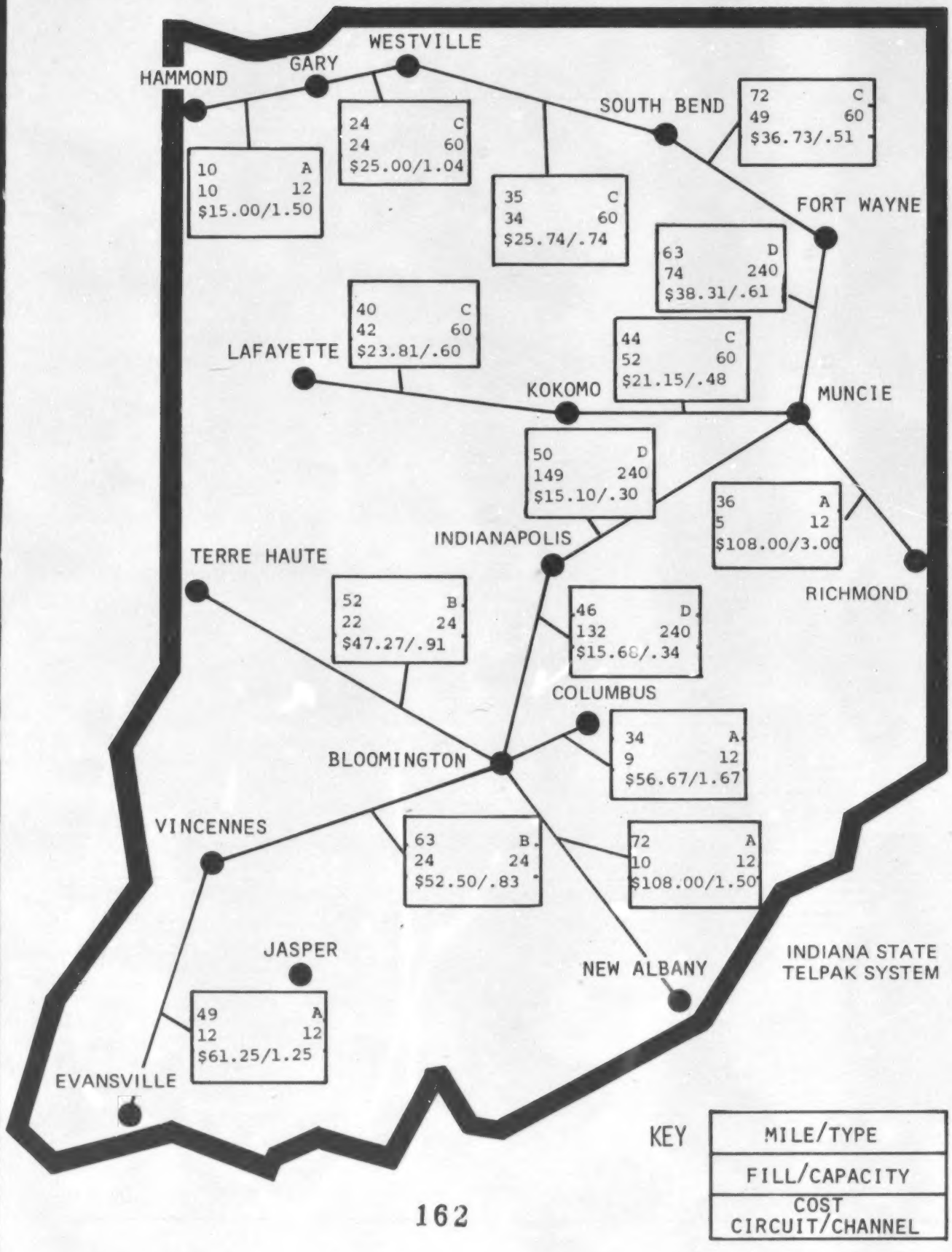
In Indiana, IHETS leases groups of intra-state channels going the same route at a bulk discount; these groups, or telpaks, can be leased in four quantities:

A - bandwidth of 12 voice channels - $15 per mile per month
B - bandwidth of 24 voice channels - $20 per mile per month
C - bandwidth of 60 voice channels - $25 per mile per month
D - bandwidth of 240 voice channels - $45 per mile per month

An additional $30 per month for channel terminations (chan terms) is charged for each line used. IHETS then opens each telpak to a number of educational institutions and state agencies and prorates the cost of the telpak among its users. For example, the Telpak D between Indianapolis and Bloomington has 132 lines in use as of April 15, 1975; thus the charge per line per mile is 34¢ a month--a considerable savings indeed as compared to IXC rates.

Moreover, Telpak buying offers an advantage other than price reductions--flexibility. IHETS uses its Telpak circuits for both the voice and audio networks, and Indiana University operates its computer network over its Telpak circuits. Lines in Telpak can be multiplexed, a process essential to any extensive data communication, and it is this feature in combination with the cost-savings which makes Telpak such an attractive opportunity for computer personnel at Indiana's colleges and universities.

Following is a map of the status of the statewide Telpak System as of April 15, 1975; the cost figures will fluctuate slightly as the number of circuits utilized in a given telpak changes.


WESTVILLE
HAMMOND
GARY
SOUTH BEND
FORT WAYNE
LAFAYETTE
KOKOMO
MUNCIE
INDIANAPOLIS
TERRE HAUTE
RICHMOND
COLUMBUS
BLOOMINGTON
VINCENNES
JASPER
NEW ALBANY
EVANSVILLE
10 A
10 12
$15.00/1.50
24 C
24 60
$25.00/1.04
35 C
34 60
$25.74/.74
72 C
49 60
$36.73/.51
63 D
74 240
$38.31/.61
40 C
42 60
$23.81/.60
44 C
52 60
$21.15/.48
50 D
149 240
$15.10/.30
36 A
5 12
$108.00/3.00
52 B
22 24
$47.27/.91
46 D
132 240
$15.60/.34
34 A
9 12
$56.67/1.67
63 B
24 24
$52.50/.83
72 A
10 12
$108.00/1.50
49 A
12 12
$61.25/1.25
INDIANA STATE
TELPAK SYSTEM
KEY
MILE/TYPE
FILL/CAPACITY
COST
CIRCUIT/CHANNEL

APPENDIX D-4

POSSIBLE VIDEO NETWORK SERVICE TO

INDEPENDENT COLLEGES AND UNIVERSITIES

USING PRESENT AND PROPOSED ITFS/CATV SYSTEMS

PRESENT SYSTEMS	PROPOSED SYSTEMS
South Bend (CATV)	Terre Haute (ITFS)
Bethel College *	Rose-Hulman Institute
Holy Cross Junior College	Saint Mary-of-the-Woods College
Saint Mary's College*	
University of Notre Dame*	Evansville (ITFS)
Lake County (ITFS)	University of Evansville
Calumet College	Fort Wayne (ITFS)
Valparaiso University°	
	Concordia Senior College
Indianapolis (ITFS)	Fort Wayne Bible College
	Huntington College
Butler University	Indiana Institute of Technology
Indiana Central College	Saint Francis College
Marian College	
	Columbus (ITFS)
	Franklin College

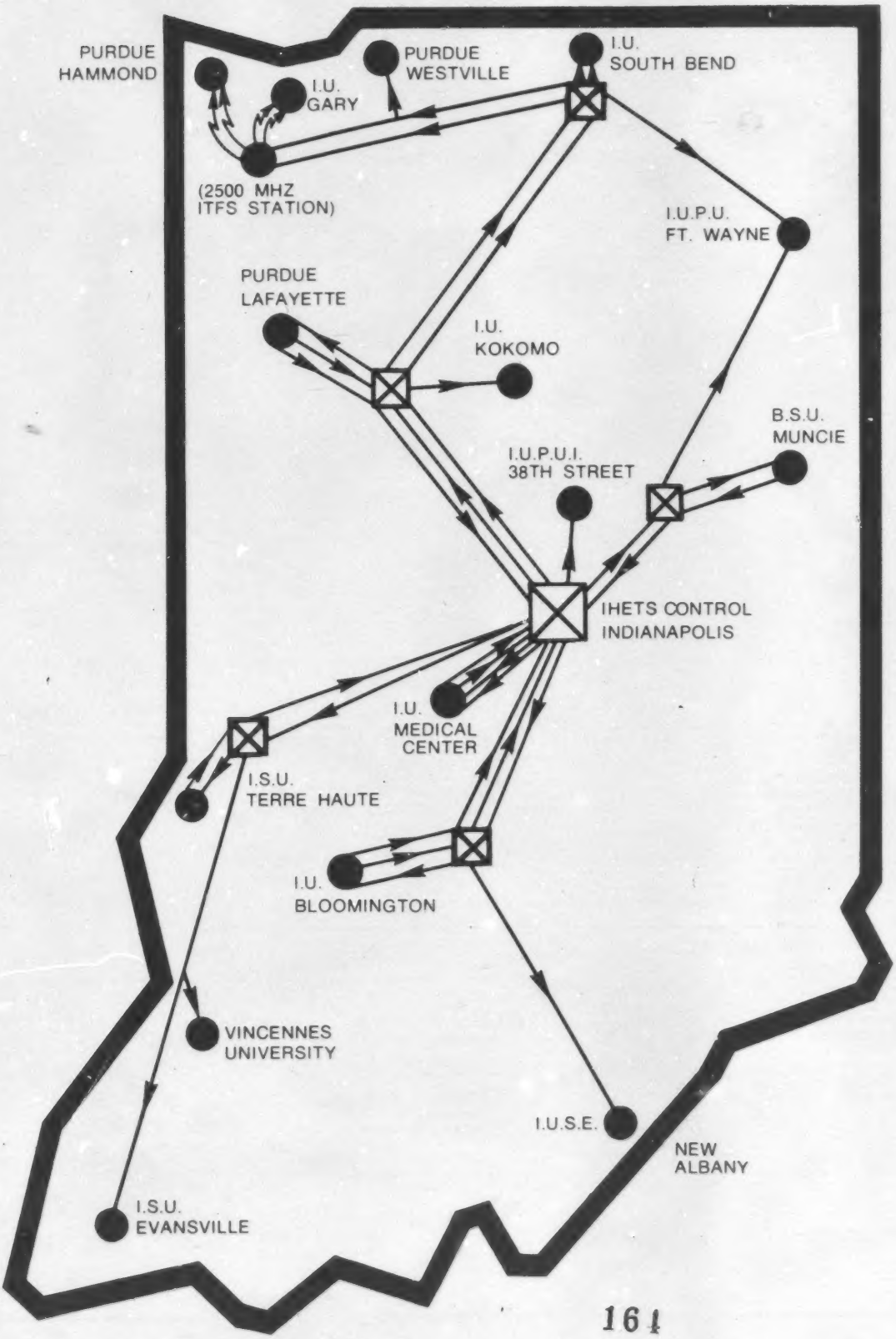
OTHER:

1. Modification of South Bend CATV could serve Goshen College.
2. Future connection to Richmond CATV could serve Earlham College.

* Already have reception capability.

° Plans soon to obtain reception capability.

FULLY-SWITCHED MULTI-POINT VIDEO NETWORK
OF THE INDIANA HIGHER EDUCATION TELECOMMUNICATIONS SYSTEMS



APPENDIX E

FINANCIAL REPORT

IHETS INDEPENDENT COLLEGE PROJECT
97-701-40

January 31, 1974

Expense Class	Budgeted	Expenditures to Date	Current Balance
SALARIES 2400			
Coordinator	$22,667.00	$13,968.20	$ 8,698.80
Secretary	9,917.00	9,917.00	-0-
SUPPLIES AND EXPENSES 5000			
Office Supplies	500.00	142.96	357.04
Postage	600.00	312.50	287.50
Engineering Services	9,917.00	9,917.00	-0-
Bookkeeping and Audit	2,161.00	2,161.00	-0-
Workshops	2,000.00	174.37	1,825.63
Printing Costs	2,000.00	77.00	1,923.00
FRINGE BENEFITS 5625	1,000.00	693.02	306.98
RETIREMENT 5770	4,754.00	2,589.83	2,164.17
TRAVEL 6000	5,300.00	1,662.06	3,637.94
CAPITAL 7000	500.00	485.00	15.00
TOTAL	$61,316.00	$42,099.94	$19,216.06

(NOTE: The eighteen-month project will be completed as of July 31, 1975)

APPENDIX F

GLOSSARY

CAI - Computer-Assisted Instruction - usually refers to any use of computer technology to assist or direct student learning.

Carrier-Current Radio - a "closed-circuit" radio system distributing the signal via electrical power lines to radio receivers.

CATV - Community Antenna Television - a television system using coaxial cable to distribute television signals from a master antenna to homes and businesses within a community or other franchised service area.

CCTV - Closed-Circuit Television - a television distribution system which uses coaxial cable to distribute signal(s) to one or more selected locations.

Centrex - telephone switching system with almost unlimited capacity.

CVIS - Computerized Vocational Information System - a comprehensive vocational guidance system developed in Villa Park, Illinois, and widely used throughout the country.

EIAJ-Type I - Electronics Industry Association of Japan - Type I is a Japanese standard of compatibility among half-inch black-and-white videotape record/playback units.

FX Line - Foreign Exchange Line - the extension of a customer's telephone system to a telephone company central office in another city.

Hardware - initially generated in computer technology to refer to computer equipment; more recently the reference has been widened to include telecommunications equipment in general.

ITFS - Instructional Television Fixed Service - a group of channels in the 2500 mhz band, outside the broadcast band, which have been set aside by the Federal Communications Commission for short-distance educational television and data transmissions.

Microwave - transmission of signals through the air from one point to another in direct line of sight.

PBX - Private Branch Exchange - a telephone switching system on a user's premises connected to the public telephone network and operated by the user; it may be operator- or dial-controlled.

PLATO - a large-scale, computerized teaching system developed at the University of Illinois and capable of handling several thousand student terminals.

RF Distribution - Radio Frequency Distribution - use of modulated carriers at radio frequencies to allow several programs to be transmitted and received simultaneously over a single coaxial cable. Standard television or radio receivers are usually utilized to select the desired signal at a given reception location.

Software - the term used to refer to programming, particularly to computer programs; as opposed to the hardware (equipment) of telecommunications, the software is the programming used with the hardware.

Tele-lecture - use of the telephone to bring outside resource persons into the classroom. A special telephone speaker-amplifier device is utilized to allow students to hear and question the outside resource person. Tele-lectures may be augmented by the addition of visual elements from locally-projected materials.

Telephone Line - a pair of wires associated with a specific telephone or extension number.

Telephone Station - one of the input or output points of a telephone system; usually the telephone set or the point where a business machine interfaces the telephone line.

Telephone Trunk - a circuit of two or four wires connecting telephone switching equipment in different locations.

WATS - Wide Area Telephone Service - a service provided by telephone companies which permits a customer to direct-dial telephones in a particular zone over a special access line for a fixed monthly charge.

APPENDIX G

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Dr. Jane G. Richards, Executive Director, IHETS

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System Development Committee:	Mr. Richard G. Weber Assistant Dean of Alternative Programs University of Evansville
Program Development Committee:	Dr. Watson S. Custer Dean of the College Huntington College
	Mrs. Ann C. Harper Assistant Professor of Radio-Television Butler University